

The Commercial Car Journal

VOLUME XXXIII

PHILADELPHIA, JUNE 20, 1927

NUMBER 4

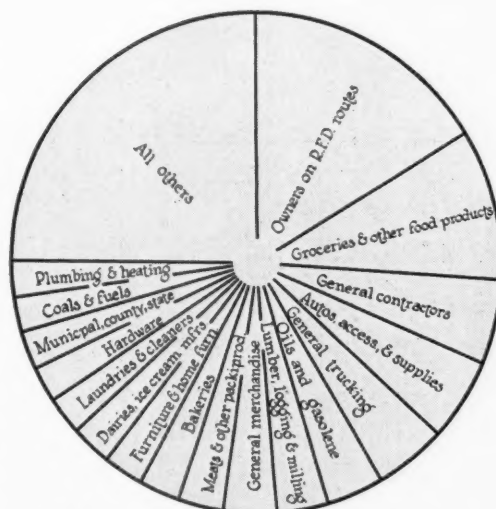
Are You Selling All of Your Market?

Vocational Analysis of 1,321,130 Motor Truck Registrations Gives Broad Picture of Truck Sales Possibilities

KNOWING who uses trucks is one of the essential preliminaries to determining who will buy trucks inasmuch as a large part of the market now consists of owners with either worn-out vehicles to be replaced or in need of additional equipment to take care of their expanding businesses.

Of course, experience provides this information about truck users in a general way and the individual can obtain more specific information by the analysis of his own sales. However, such analysis does not permit a proper evaluation either nationally or locally of the relative importance of the various vocations as users of trucks for a variety of more or less obvious reasons. To get a comprehensive and accurate picture of the standing of the various vocations and the types of trucks used by each, it is necessary to classify all the trucks in use in the country as a whole or in a particular territory as to vocation and capacity.

Recently, considerable information regarding the vocational use of trucks taking the country as a whole has become generally available through the publication of a summary of a survey made by R. L. Polk & Co., Detroit, in *Facts and Figures of the Automobile Industry*, a booklet issued by the National Automobile Chamber of Commerce. This summary presents some of the results of an analysis of 1925 motor truck registrations and, in a qualitative way at least, provides much data on the use of trucks which are of interest and value to sales executives. Similar analyses of truck registrations by vocation and capacity have been made



Relative importance of 17 largest vocational users of trucks as shown by survey. "All others" includes 44 vocations

by the Polk organization for each county in the United States.

Although the information presented here pertains particularly to the national market, it also has considerable local significance. Of course, the proportionate local representation of each vocation will vary from the national distribution in each sales territory for the reason that, while a particular vocation may be an important factor nationally, it may be of minor importance locally. On the other hand, it is possible that a vocation which the summary shows to be a large user of trucks, might not be represented in proportion in the sales of a manufacturer, branch or dealer, largely because this particular vocation has not been exploited.

Some branches and dealers now are using to good advantage statistical information concerning the use of trucks in their respective territories. With it they are able to direct their sales activities more effectively and to check up on their performance in comparison with competition.

The summary, which is reproduced in modified form probably gives the broadest picture of truck use that has ever been available for the reason that it classifies 1,321,130 truck registrations out of a 1925 national total of 2,441,709. These registrations are classified into 61 vocational or industrial groups. In addition, 968,843 of these registrations have been classified as to capacity as well as to vocation so that the summary throws considerable light not only on who uses trucks but also on what capacities are employed by the various classes of operators.

Owners on R. F. D. routes registered 219,539 of the 1,321,130 registrations analyzed or nearly 17 per cent of the total. The next largest classification is groceries and other food products with just under 10 per cent of the total and then come general contractors; automobiles, accessories and supplies; general trucking; oils and gasoline; lumber, logging and mill work; general merchandise; meats and other packing house products; and bakeries in the order named. These are the 10 largest classifications and represent 57.87 per cent of the registrations shown by the summary. The next 20 classifications in point of size represent 31.2 per cent of the total so that the 30 largest vocational users account for 89.07 per cent, leaving 11.93 per cent divided between 31 different vocations.

In the less than one ton and in the one-ton groups, owners on R. F. D. routes again form the largest classification with 20.4 and 22 per cent respectively. In the former group, groceries and other food products is the second largest classification with automobiles, accessories and supplies; general contractors; bakeries; laundries and cleaners; general merchandise; plumbing and heating; meats and other packing house products, furni-

ture and house furnishings making up the balance of the first ten. These ten classifications make up 65.6 per cent of the registrations shown in the summary for this capacity group.

In the one-ton group, the ten largest classifications account for 61.3 per cent of the registrations shown in the summary. After owners on R. F. D. routes come in order groceries and other food products; general contractors; automobiles, accessories and supplies; general merchandise; lumber, logging and mill work; general trucking; furniture and house furnishings; oils and gasolines, and laundries and cleaners.

For trucks rated at over one ton but less than 2½ tons, the largest classification is groceries and other food products with owners on R. F. D. routes a close second. Following come general trucking; oils and gasoline; lumber, logging and mill work; municipal, county and state; general contractors; automobiles, accessories and supplies; coal and fuels exclusively, and bakeries. These ten classifications represent 55.9 per cent of the total in this capacity group.

The largest classification in the 2½-ton and over (Turn to page 32, please)

Vocational Analysis of 1,321,130 Motor Truck Registrations †

	All Registrations* Classified Number Rank		Under One Ton Capacity		One Ton Capacity		2001-4999 Lbs. Capacity		5000 Lbs. Up Capacity	
Owners on R. F. D. routes.....	219,539	1	48,256	1	103,244	1	11,473	2	5,119	8
Groceries and other food products.....	130,690	2	31,020	2	49,019	2	11,495	1	7,220	5
General contractors	74,141	3	12,893	4	27,731	3	5,809	7	7,302	4
Auto accessories and supplies	69,198	4	13,867	3	22,027	4	5,536	8	4,243	10
General trucking	62,542	5	4,407	13	12,837	7-8	10,697	3	18,739	1
Oils and gasoline	49,008	6	4,104	14	12,730	9	8,979	4	10,248	2
Lumber, logging and mill work	45,072	7	3,363	17	14,621	6	7,360	5	7,860	3
General merchandise	43,736	8	8,250	7	20,553	5	2,265	21	948	31
Meats and other packing house products.....	35,433	9	7,043	9	12,510	11	3,778	13	2,671	13
Bakeries	35,419	10	9,970	5	10,417	15	4,406	10	1,398	24
Furniture and house furnishings	33,525	11	6,664	10	12,837	7-8	3,805	12	1,933	18
Creameries, dairies and ice cream mfrs.....	33,509	12	5,654	12	10,766	14	4,151	11	4,416	9
Laundries and cleaners	31,959	13	9,875	6	12,544	10	1,631	22	584	36
Hardware	31,770	14	6,469	11	12,009	12	2,849	17	1,733	19
Municipal, county and state	30,955	15	3,858	16	8,863	16	5,948	6	6,081	7
Coals and fuels exclusively	29,557	16	1,745	30	8,112	17	5,109	9	6,699	6
Plumbing and heating	28,474	17	7,529	8	10,987	13	1,587	24	1,083	28
Gas, electric and water utilities	20,520	18	4,084	15	6,111	22	2,854	16	2,364	14
Produce and commission merchants.....	19,108	19	2,610	21	7,614	18	2,592	18	1,481	22
Federal, army and others	18,826	20	441	50	113	61	70	61	130	54
Metal and metal products	18,663	21	2,581	22	6,418	19	2,346	20	3,231	12
Building materials and supplies	18,544	22	2,323	23	6,168	21	2,370	19	3,413	11
Coal, coke and ice	16,093	23	1,203	34	6,334	20	3,415	14	1,951	17
Bottlers	15,612	24	1,591	33	4,959	23	3,202	15	1,982	16
Confectioners	13,179	25	2,798	18	4,633	24	1,368	29	959	30
Machinery and tools	10,899	26	1,802	28	3,732	29	1,304	30	1,392	25
Telephone and telegraph	10,721	27	2,636	20	3,847	26	913	34	646	35
Flour and feed mills, grain elevators.....	10,517	28	1,050	35	3,789	27	1,501	25	1,023	29
Undertakers	10,162	29	1,806	27	3,886	25	1,590	23	121	55
Drugs, chemicals and drug sundries.....	10,150	30	1,747	29	3,411	31	1,241	31	1,445	23
Hotels, clubs, caterers and restaurants.....	9,770	31	1,972	26	3,778	28	833	36	441	38
Florists	9,563	32	2,652	19	3,445	30	648	39	235	49
Dry goods	8,894	33	1,981	25	2,762	32	1,432	27	779	33
Railroads and steamships	8,052	34	592	47	2,097	36	1,428	28	2,134	15
Electrical machy. and contractor's supplies...	7,165	35	2,169	24	2,536	33	514	41	285	46
Mines and quarries	6,978	36	669	43	1,974	37	746	37	1,631	20
Department stores	6,575	37	1,610	32	1,349	46	1,434	26	856	32
Textiles	6,160	38	622	45	2,305	34	1,007	33	726	34
Cigars and tobacco	6,018	39	1,650	31	1,949	38	449	45	309	43
Hay, grain and feed	5,747	40	752	41	2,175	35	667	38	525	37
Agricultural machinery and implements.....	5,583	41	831	40	1,733	41	465	44	427	39
Real estate	5,568	42	868	38	1,908	39	377	49	315	42
Paper and paper products	5,490	43	599	46	1,319	47	1,012	32	1,182	26
Warehouses	4,887	44	327	56	1,152	48	886	35	1,517	21
Clothing	4,833	45	979	37	1,778	40	502	42	316	41
Novelties and toys	4,783	46	856	39	1,624	43	552	40	293	45
Road contractors	4,657	47	334	55	1,585	44	468	43	1,166	27
Electrical contractors	4,109	48	1,036	36	1,708	42	176	56	103	57
Schools	3,739	49	551	49	1,507	45	404	46	104	56
Printers	3,477	50	749	42	1,109	49	359	50	247	48
Publishers	3,273	51	659	44	1,008	50	379	48	234	50
Office and store equipment	3,238	52	558	48	998	51	387	47	390	40
Leather goods and luggage	2,194	53	357	53	803	53	292	51	233	51
Postoffice Department	2,158	54	391	51	510	56	193	55	220	52
Shoes	2,145	55	345	54	898	52	231	54	162	53
Rubber products exclusively	1,772	56	385	52	565	55	241	52	295	44
Hospitals and public institutions.....	1,525	57	307	58	596	54	173	57	61	61
Electric railways	1,383	58	279	59	352	60	233	53	269	47
Jewelry	1,370	59	261	60	508	57	143	58	84	58
Banks	1,320	60	206	61	379	59	128	59	75	60
Household appliances	1,283	61	310	57	498	58	103	60	81	59
	1,321,130		237,496		469,727		137,509		124,110	

* Includes trucks which could not be classified as to capacity.

† Based on registrations as of Jan. 1, 1926.

Do Your Prospects Believe *What You Say?*

*They Will if You Show Them That You Know
Their Business and Transportation Needs*

By Clayton Lewis

Manager Truck Department, L.
W. Jordan Co., Graham Brothers
Dealer in St. Paul, Minn.

ALTHOUGH a sound mechanical knowledge of motor vehicles is essential to the successful sale of trucks, beyond this point we are apt to enter into discussions which are beside the issue.

Most prospects are not schooled in thermodynamics and dynamometer tests. Drop forgings and chrome vanadium steel mean but little. What they are interested in is

equipment that will run day in day out with little care and low operating cost. The buyer is really not purchasing so many castings and steel forgings. What he is buying is miles of transportation—deliveries—tons hauled—depending on the required service.

The salesman must carry sufficient weight so that the prospect will accept his statement as facts. This confidence can only be built up by a thorough knowledge of the buyer's business. If it is a road contractor, know the type of loading equipment he uses—the number of yards of gravel or dirt he hauls—the weight per yard—the average haul—the weight per bag batch. Be able to show him with paper and pencil how your equipment will save him money and do his work better.

There is no secret way to obtain this information. Foreman, drivers and superintendents are usually friendly. Take a trip with several of the drivers. They know what is needed and the shortcomings of the equipment in use, and are not reticent in telling about it.

Have the entire proposition figured in advance. When a contractor bids on a project he does not expect the firm to whom he submits the estimate to figure his costs for him. Likewise you do not expect the contractor to estimate accurately the savings which your



The salesman must carry sufficient weight so that the prospect will accept his statement as facts

equipment will make him. Get the figures of what his costs have been. Give him a report on how much he can save by buying and operating five or ten of your make trucks over the period of their economical life. In many cases, especially where obsolete or improper equipment is being used, the figure will be enormous and the contractor will be glad to go into more detail with you.

If you are discussing the truck with the owner of a fuel business, it would be folly to hope for an order without first knowing his operating conditions. Shoes and neckties are sold without a knowledge of the prospect's problems, but not trucks. A visit to one of the coal yards and a friendly talk with the yardmaster would be of infinite value. He could tell you the total tons delivered per week—what percentage of this was loaded on the trucks—what their peak days were—what weight trucks were used—the volume of coke business done—the type and capacity of scales used—the size and capacity of storage bins and elevators.

With this information you are talking from facts and can give the prospect concrete advice about his business. You are in a position to say, "Mr. Jones, we have found that your heavy trucks carrying five and six tons have caused a considerable amount of complaint due to broken sidewalks and ruined lawns. They have difficulty turning in small alleys and frequently get stuck. When loading they congest the yard by having to go to different bins to get the required loads for domestic delivery. It is our recommendation that you keep the two heavy trucks for steam coal hauling but replace the trucks on domestic work with our equip-

(Turn to page 32, please)

Back Door Selling Brings

*Boston I. H. C. Branch
Has 87 Per Cent of
Owners as Service
Department
Customers*

EIGHTY-SEVEN per cent of International Harvester truck owners in the Boston district are coming to the branch for service on their trucks, according to records of the branch. This indicates that service facilities are being sold to an unusual degree and further that the service department is doing its share in establishing and maintaining owner good will in the district.

Team work between the sales and service departments is the reason for this showing, according to C. B. Chapman and C. E. Batstone, respectively sales and service managers of the branch, and is also responsible for the fact that the Boston branch led all other branches of the International Harvester Co. in gain in sales over last year, according to factory figures dated late in May. And 1926 was the best year in the history of the Boston branch.

Establishment of a spirit of mutual understanding and friendly cooperation between owners and service department is the foundation of the policy of Mr. Batstone. He makes it a point to have a talk with each new owner of International Harvester trucks in order that the owner may know just what to expect from the service department and also what the service department expects of the owner to insure satisfactory operation of the new truck.

Among the things which the owner is told to expect are: promises of completion of repair work on trucks will be kept; in no case will it be necessary to make two calls for the correction of the same trouble; service on electrical and other units not made by the International Harvester Co. will be furnished as an accommodation for customers; individual card records of repair work on each truck will be maintained by the company; service will be available throughout the day, without interruption at noon, and at night for those owners requiring it.

Work Delivered on Time

Each of these policies was adopted by Mr. Batstone to overcome an existing difficulty. Disappointing customers on promises of delivery of repair work caused much complaint. This has been eliminated almost entirely by a close tie-up between service salesmen and shop office. Some leeway is allowed on all promises and in case the job is finished ahead of time the customer is called on the phone and asked to call for his truck. Owners have repeatedly expressed their appreciation of this courtesy.

Repeated trips to a service station to overcome the same trouble are a great cause of dissatisfaction on the



International Harvester Co. branch in Boston and a portion of the service department, which is in charge of Charles E. Batstone

part of owners, according to Mr. Batstone. The owner is not interested in the cause of the trouble, except to the extent that he wants it eliminated. An owner who came to the service station with a miss in the engine, and was sent on his way after a spark plug had been changed, only to return again the next day with the same trouble brought this question to a head. Mr. Batstone had a talk with the shop force and said "I think it is fair to ask you why any customer should have to come back twice for the same trouble, and I think it is fair to tell you hereafter no customer shall be required to come back twice for the same trouble. When a customer has trouble with a car it is up to us to find out the cause and to remove the cause." The result of this policy is that his report shows only one customer returned the second time for the same job in eleven weeks.

Although the standard N.A.C.C. warranty for trucks does not cover tires, horns, electrical equipment and many other items, service on these units, either before or after the warranty period, is taken care of by the service department further to carry out the idea that it is headquarters for service and is maintained for the accommodation of International Harvester truck owners. The service department acts as a buffer between the owner and the specialized service station. This service is appreciated by out-of-town owners who are unfamiliar with the location of the various unit service stations in Boston. In case an owner is sent to an outside service establishment he is given the name of a person to ask for on arrival and a phone call is made advising this person that a customer is on the way.

An individual card is kept for each International Harvester owner, who is a customer of the service department. On the card is entered every service bill, the

Buyers in Front Entrance

By James W. Cottrell

amount and summary of the work done and the value of all free service given under the warranty. The card plan was adopted to put a stop to complaints by customers who had exaggerated ideas as to how much money they had spent on maintenance of individual trucks. Past records are not included but the card record does show each transaction since its inauguration about three years ago and totals to date.

One half of the day force of mechanics have a lunch period starting at 12 o'clock and the balance at 12.30 p. m. This plan leaves a minimum of 50 per cent of the force on duty during lunch time and prevents delay in caring for customers during noon hour.

Night service was established as a result of report by salesmen that a certain make of truck was particularly strong in a certain vocation. They stated that details of design of the truck, in question, particularly adapted



it for this work and that they had great difficulty in meeting competition. Mr. Batstone was not satisfied with this explanation and he kept the matter in mind for later investigation. Some nights later he passed the service station of the competing truck and found it in operation. He learned that night service was essential for trucks used in the vocation in which the competing truck was strongly entrenched and in others, and night service therefore was established in the International Harvester shop.

Night service made a decided hit; in fact it became so popular that there was every prospect that very little work would be done in the daytime. This condition was far from desirable as mechanics have a just objection to working at night. A rule was established that night work should be confined to emergency work and trucks owned by customers whose business required this service, including trucks operated at night.

Settling the question of credit at the time a repair order is written up and signed, rather than when the job is finished, has prevented much dissatisfaction on the part of customers. If the owner does not have an account with the company the fact that payment will be expected at the time the truck is delivered is explained to him tactfully at the time he places the repair order. Before this policy was adopted many C.O.D. customers

BACK door salesmanship has long been recognized by successful truck merchants as a factor vital to the success of the entire business. Whether the operator comes back when he needs additional equipment in a large measure is determined by how he has been handled when he has come to the back door—the entrance to the service department—to buy maintenance.

This story tells how Charlie Batstone, service manager, has made his department of the I. H. C. branch, in Boston, a recognized factor in making truck sales. His methods are not essentially big-city "stuff" but will work equally well in a town of any size. It will pay you to know about the methods Batstone is employing so successfully.

complained, when they arrived to take their trucks after repairs, that they had not been told to bring money with them and as a consequence were delayed and sometimes compelled to make an extra trip to get the money.

Particular pains are taken to run down and remove any definite cause for dissatisfaction on the part of customers. One customer who called at the service station for a minor job said that the truck was running fine but he had a great deal of difficulty in starting it and had towed it every morning for a week to get it started. He was asked what time he started work in the morning and was told that a mechanic would call a few minutes before that time to watch the starting operation and locate the cause of the trouble. The mechanic found out the next

morning that the cylinder-head was loose allowing a loss of compression by the cylinder-head gasket which was reduced greatly after the engine warmed up. A new cylinder-head gasket was installed and the trouble ended, the customer thus was changed from a knocker to a booster.

Satisfied Customer Buys a Truck

Sales of a new truck was brought about by another service call. An owner, in a town some miles from Boston, reported that his engine did not have enough power. Mr. Batstone went out to call on the owner and found that he had previously had some difficulty due to oil and graphite getting into the magneto. Although the trouble had apparently been cleared up the owner lacked confidence in the engine and said that no amount of tinkering would make it pull the way it should. After testing out the truck and talking with the owner Mr. Batstone decided that the only way to satisfy him was to give him another engine. Accordingly a service engine was placed in the customer's truck. The original engine was taken back to the service station and after a few minor adjustments was ready for service. A short time later the owner came in and bought a new truck.

A mileage charge for towing disabled trucks to the service station or for roadside repairs caused much friction. Because of traffic conditions and a large

number of one-way streets it often happened that the service car charge for towing from a given location was twice as much as that for a point only one block away. A zone system has entirely overcome this difficulty. Zones are based on a radius of 5, 10, 15, 20 and 25 miles from the service station and zone limits are marked by circles on a large map displayed prominently in the shop office and parts sales department. A policy of cooperation with fleet owners who have their own service facilities has been adopted as another step toward customer satisfaction. Fleet owners and their mechanics are told of the facilities of the service department which they may have occasion to use, and they are asked to seek advice whenever they are stuck with a problem in truck maintenance. The service department is pictured as the aid, but not the rival, of the fleet owner mechanic. An offer of a free course of instruction in the International Harvester branch shop for his mechanic was made to one owner who bought several trucks. It was pointed out to him that the service department was interested in the successful operation of his trucks and that if his mechanic was not familiar with the details of International Harvester trucks they would be pleased to instruct him on these points. This incident happened a year ago and the mechanic, who cannot do all of the work because of increase in the size of the fleet, is sending the more difficult jobs to the branch service station.

Shop Force Doubled

The shop force was doubled within three months after Mr. Batstone took charge of it three years ago. When he entered upon his duties as service manager of the Boston branch he found there were eight mechanics in the shop and that parts window was the busiest section of the department; it was evident that outside shops were doing the bulk of repair work.

He took a list of the names and addresses of parts purchasers and started out making calls on them. He invited criticism of service rendered owners and sold himself to them by telling them the type of service they might expect in the future. It took long hours and hard work to make the rounds, but he secured a wealth of information concerning owners, their operations, attitude toward his company and—to his surprise—many sales leads.

One customer reported that he was getting entire satisfaction from a mechanic in a small shop, who was doing repair work for him. "If he is as good as you say he is, I will hire him," said Mr. Batstone. "He cannot possibly have the equipment and the service facilities we have and he can give you even better service by working for us."

The idea soon got around that Mr. Batstone meant what he said about giving service and a constantly increasing number of owners brought their trucks to his department for inspection and repairs. There are now 28 mechanics employed in the shop, of whom five work at night. Service business is showing a satisfactory increase and additional mechanics are being hired as required.

Characteristic of the manner in which Mr. Batstone conducts his office is the fact that he is known as "Charlie" to customers, mechanics and branch office staff. He is able to get in much closer contact with customers than is usual with service managers. In many cases, owners and drivers know him only as "Charlie" and to him they bring all of their troubles in connection with operation and maintenance of their trucks. "Charlie" is looked upon as a confidant and he learns many things unknown to a man surrounded by

a fancy office and waiting room, a lot of dignity and the title of service manager. His office is directly opposite the service entrance, plainly visible through a glass partition, and customers can, and do, walk into his office unannounced and without the slightest formality.

Being in such close contact with practically all of the International Harvester truck owners in the district Mr. Batstone and the service department staff pick up much information which is of value to the sales department. Constant inquiries are made of owners and drivers as to how they are satisfied with their trucks, how other owners of their acquaintance are making out and what salesmen are calling on them. These questions often bring out the fact that a salesman has not called for some time although the owner is in the market for a truck or soon will be. Chance remarks about increase of business, given as a reason for request for hurry-up repairs, also give an inkling of sales possibilities. All information of this kind is turned over to salesmen for immediate follow-up.

Sales Department Praises Service

Unqualified praise of the service received by owners from the service department was given by Mr. Chapman and several salesmen on his staff. "We cannot say enough in praise of the value to the sales department, of the work of Charlie Batstone and service which his department is giving to owners," said Mr. Chapman.

"We can trace almost all resales to the fact that we make clean sales in the first place and the satisfaction of customers with our service," he continued. "There are no tricks about our sales work. We try not to elaborate on claims made for performance of International Harvester trucks, or the service which we are supposed to give after the sale is made. We make an honest endeavor to sell an honest product at an honest price."

The policy of the organization is to maintain prices and to accept trade-ins on a sound basis only. Some sales, in fact many of them, have been lost by adhering to this policy, but Mr. Chapman believes that it is better to lose sales than to make them by offering excessive trade-in allowances, selling to irresponsible operators or cutting prices.

A salesman who has the confidence of prospects to such an extent that they sign contracts and notes in blank and ask him to fill in details is on the staff of the sales department. He started selling under Mr. Chapman's direction eight years ago and is now selling from 40 to 60 trucks per year.



Buddy Stewart truck in vacuum cleaning furnace service. Soot and dirt from the furnace is drawn through a large pipe and deposited into the large bag. Bags and pipe are collapsible

Commercial Car Journal

Flat Rate Price List

Piston Pins and Rings—Continued

Rod Bearings

Definitions of Repair Operations

All rod bearing, piston and pin and ring renewal operations include alignment of rods.

11. Oversize piston, ring and piston pin assembly install one by selection after rods are out. (No honing of cylinders included.)
12. Piston, pin and rising assembly, install one oversize (by honing not more than .005 in.) and adjust rods after rods are out. Please check: engine has detachable head—head not detachable.
13. Piston, pin and ring assemblies, oversize, install all (by honing not more than .005 in.) after rods are out.
14. Piston, pin and ring assemblies, oversize, install all by honing out not more than .005 in. and adjust rods. (13 plus operation 1 under rod bearings.)

1. Remove and reinstall and adjust connecting rods. (This operation will not be sold separately but is used to compute cost of other operations.)
2. Align one rod, when rod is out.
3. Adjust all rod bearings (removal of oil pan included in price.)
4. Rod bearing, renew one (removable type) and take up others.
5. Renew each additional rod bearing of removable type.
6. Rod bearing, renew one (cast-in exchange type) and take up others.
7. Renew each additional rod bearing (cast-in exchange type.)
8. Renew all rod bearings (exchange type) when rods are out.

	11	12	13	14	1	2	3	4	5	6	7	8
Armleder 50, 55, 60	\$2.75	\$8.00	\$30.00	\$45.00		\$0.75	\$13.50	\$15.00	\$4.50	\$10.00	\$3.00	\$12.00
Brockway R & T	(a)	6.00	(a)	(a)	\$15.00	.75	18.50	19.50	3.00	12.00	4.50	3.75
Brockway E & S	(a)	6.00	(a)	(a)	15.00	.75	18.50	19.50	3.00	12.00	4.50	3.75
Chevrolet 1 ton	2.00	3.70	13.00	20.00	7.75	.50	5.40			9.00	1.50	4.25
Dodge Bros. 3 brg.	3.00	5.15	17.25	23.50	7.25	.50	6.00	7.75	2.50			(b)7.75
Dodge Bros. 5 brg.	3.00	5.15	17.25	23.50	7.25	.50	6.00	7.75	2.50			(b)7.75
Douglas 4 cyl.	6.75	(a)	(a)	(a)	6.50	.50	6.00	7.50	2.25	7.50	2.25	13.50
Douglas 6 cyl.	9.00	(a)	(a)	(a)	7.50	.50	7.00	10.50	2.25	10.50	2.25	19.50
Ford 1 ton	1.50	3.50	12.50	16.25	5.75	.40	4.00			(c)5.80	1.50	4.80
Garford 100-80	3.00	(a)	(a)	(a)	25.50	.75	11.25	13.50	10.50			
Garford 50-30-20	3.00	(a)	(a)	(a)	16.50	.75	9.00	10.50	7.50			
G.M.C. T-20	2.25	9.75	30.00	35.50	9.50	.75	9.00			11.50	3.00	15.50
G.M.C. T-40 & T-50	2.25	9.75	30.00	35.50	9.50	.75	9.00			11.50	3.00	15.50
Graham Bros.	3.00	5.15	17.25	23.50	7.25	.50	6.00	7.75	2.50			(b)7.75
Hendrickson	7.50	(a)	(a)	(a)	12.00	.75	12.00	14.25	2.25			
Inter. Harvester S-24	2.50	4.75	17.75	20.75	3.00	.50	6.00	7.50	1.85	3.50	1.25	2.50
Inter. Harvester S-26	2.50	6.50	27.00	31.00	4.50	.50	7.00	8.50	1.85	3.75	1.25	3.75
Mack AB	2.85	(a)	(a)	(a)	18.00	.60	10.65	13.65	3.90			12.00
Mack AC	2.85	(a)	(a)	(a)	23.10	.75	17.55	19.05	3.90			12.00
Pierce-Arrow X	6.00	11.25	(a)	(a)	22.50	.75	15.45	29.55	6.15			
Pierce-Arrow W & R	6.00	11.25	(a)	(a)	23.25	.75	16.20	30.30	6.15			
Pontiac	2.50	5.00	23.00	28.00	(d)5.00	.75	(d)				1.75	10.00
Reo T-6	2.50	5.70	27.00	34.00	10.50	.50	7.00			11.00	2.00	11.00

- (a) Not listed.
(b) Removable type bearings.
(c) Includes clean carbon.
(d) Connecting rod bearings not adjustable.

How to Service Truck Four-Wheel Brakes

Part II

Lockheed Internal Type on Reo Speedwagon Junior

THE hydraulic Lockheed braking system used on the Reo Speedwagon Junior, is of the internal type with two rigid shoes at each wheel and a combined master cylinder and supply tank which keeps the system filled with liquid at all times.

The cylinder and supply tank unit, which is designated as the Lockheed compensator type of master cylinder; eliminates the separate tank for liquid supply; maintains a slight pressure throughout the system and automatically expands all packing cups; prevents air from being drawn into the system at the master cylinder, which is covered by the liquid and prevents loss of liquid due to evaporation.

Both brake and clutch pedals are mounted on the cylinder unit, the former being attached to the serrated end of a short shaft on the inner end of which is a lever which touches the piston in the master cylinder, as indicated by L in Fig. 1.

The Master Cylinder

The sectional view of the master cylinder, Fig. 2, shows the arrangements of parts in this unit. The hole B is shown at the right of the cylinder cup A which is indicated in its normal "off" position. Liquid can flow in or out of the hole B. The spring C serves to return the master cylinder piston to position when the brakes

This is the second of a series of three articles on service of four-wheel brakes. The first, covering Bendix 3-shoe internal and GMC external brakes, appeared in the May issue. The third article will appear in a coming issue.

are released and also to retain in position the inlet and outlet check valve F and D.

When the brake pedal is depressed the master cylinder piston is forced toward the valve and liquid is discharged through the outlet valve D into the line leading to the wheel cylinders.

When the brake pedal is released the spring returns the cylinder piston to its off position against a stop. At the same time the wheel cylinder return springs are forcing fluid back through the inlet check valve F until the pressure balances the force of the return spring C, when the inlet valve closes.

Action on Return Stroke

If the return of liquid is not sufficient to fill the space encompassed by the return of the cylinder piston a partial vacuum is created which causes the piston cup A to turn in at the lip and allow liquid to by-pass from the supply tank to the master cylinder. Any excess liquid will return to the supply tank through the port when the cylinder piston returns to off position.

The wheel cylinders are mounted on the dust shields and are fitted with opposing pistons the rods of which are connected to the ends of the brake shoe. Rubber boots are fitted on the open ends of the pistons to protect the cylinders from entrance of dirt. The fluid enters the cylinder between the opposed pistons and a bleeder valve

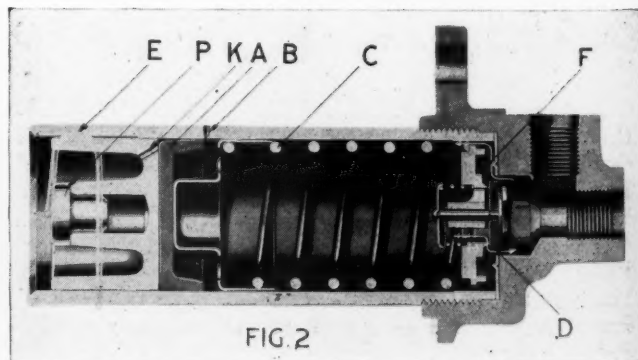
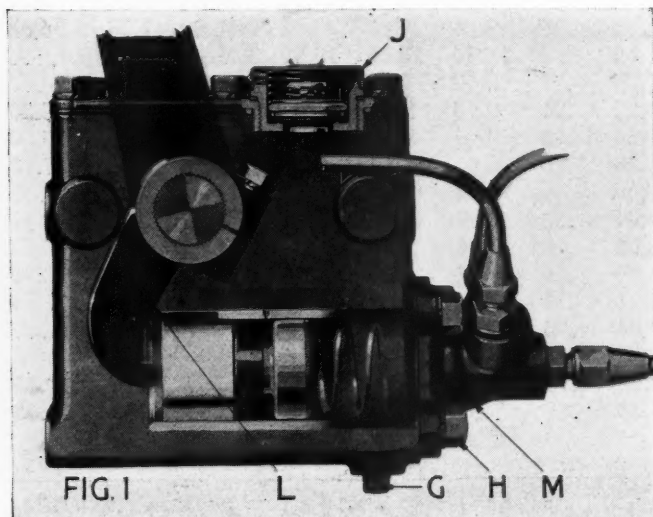


Fig. 1—Section through combined supply tank and master cylinder used on Reo Speed Wagon Junior.

Fig. 2—Section through master brake cylinder.

is located in this position for expelling air when the system is filled with liquid.

The supply tank, which feeds the system through the master cylinder as has been explained, is fitted with a filler plug, incorporating a combined inlet and outlet check valve similar to that in master cylinder J in Fig. 1, which seals the tank and prevents the evaporation of alcohol from the fluid.

As equal force is exerted by each wheel cylinder with a given pressure on the brake pedal, equalization of the brakes, front and rear and side to side, is accomplished automatically.

Adjustment of the brakeshoes to compensate for wear of linings is accomplished by rotating the adjustment cam A, Fig. 3, against the stop pins B on the shoes.

To adjust the brakes the wheels should be jacked up, one at a time or all four at once. The adjustment nut C, in Fig. 4, is rotated until the shoe touches the drum and it is then backed off slightly until the wheel turns freely without any drag. This adjustment is made on one shoe at a time and every effort should be made to adjust all eight shoes exactly alike.

The brake shoe anchor pins, on which the bottom of the shoes pivot, are eccentric and provide additional adjustments but these are set at the factory and **should not be changed** as a special jig is required to set these pins properly.

Replacement of brake shoes is recommended when relining is necessary and it is essential that the same lining be used on all four wheels on the same vehicle. This is due to the fact that uniform force is applied to all four-wheel cylinders and the effectiveness of each individual brake depends on the amount of friction between lining and drum, which in turn varies with coefficient of friction and rate of wear of linings.

Brake shoes are removed by taking off the wheel and removing cotter pins and washers from the anchor pins, guide pins and brake shoe clevis pins. The clevis is bent down to clear the shoe after the clevis pin has been removed. The shoe can easily be removed after the return spring is unhooked.

Bleeding, which is the operation of removing air from the system, is required when some part of the hydraulic mechanism has been disconnected. The job is performed by working the brake pedal which pumps liquid through the system and expels the air.

To bleed the system the floorboards are removed and the master cylinder supply tank is filled with fluid. The plug in the bleeder screw which projects from the top of the wheel cylinder is removed and a nipple, with rubber tube attached, screwed in place. The valve is

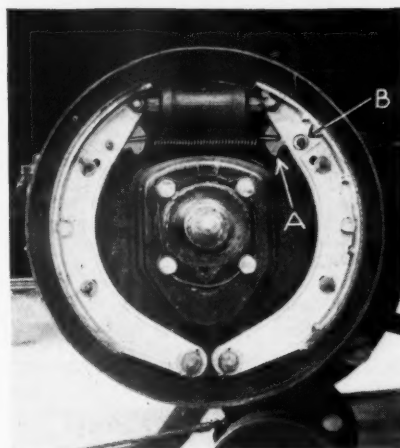


Fig. 3—Reo brake adjustments

to prevent possibility of air being drawn into the system at this point, making rebleeding necessary. The tank should be refilled when bleeding is completed.

Acknowledgement is made of the cooperation of the Reo factory in furnishing a description of the brake system and service instructions, and of Mr. George Duval, service manager of the Philadelphia Reo distributor, for additional service information and photos in Figs. 3 and 4.

Service Instructions

Recommendations for servicing Reo Speedwagon Junior brakes include: The brake pedal should be so adjusted that the master cylinder cup will clear the port when in the off position, this being necessary to bring about automatic refilling of the system; the supply tank should be checked once a month and loss of liquid, which indicates leakage, noted; unequal braking effort will result if oil, grease, or other foreign matter reaches the brake linings and these parts should be cleaned with alcohol or gasoline and roughened, as required; careful check should be made of tightness of rear wheels on the axle shafts and of rims on all four wheels.

It is advised that service departments contact all drivers who have not previously driven vehicles with brakes of this type to acquaint them with the operating characteristics of these brakes. A very rapid deceleration is obtained with comparatively light pedal pressure which results in a tendency to use brakes to the utmost for ordinary stops. There are no turnbuckles or clevises to adjust in the system and drivers will not be called upon to make any roadside adjustments.

Use of Lockheed brake fluid is strongly recommended by the Reo factory. This fluid is a mixture of neutralized castor oil and denatured alcohol treated with chemicals to neutralize any tendency to react on the metal or rubber parts of the system. Periodic attention to level of fluid in the supply

(Turn to page 32, please)



Fig. 4—The nut C provides for adjustment

opened about three-quarters of a turn with a wrench and the free end of the tube is placed in a clean receptacle, such as a fruit jar, as in Fig. 5. The brake pedal is then pushed down by hand about ten times, forcing liquid through the line, wheel cylinder and jar and expelling air.

When bleeding of one wheel cylinder is completed the bleeder valve is closed tight, the tube removed, and the plug replaced. The operation is repeated at each of the wheels in turn.

The master cylinder supply tank must be kept more than half full throughout the bleeding operation

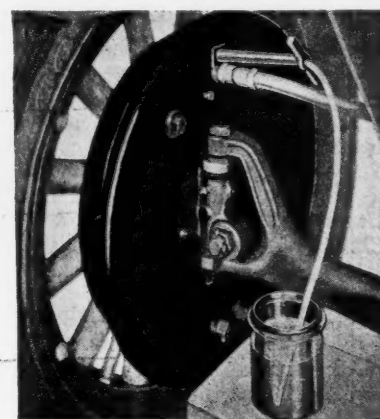


Fig. 5—Method employed in bleeding air from system

C. C. J. Shop Ideas

THIS page is designed primarily to help service station repairmen in exacting economies in time, labor and money. Salesmen, however, can also profit by scanning over these practical hints.

The average buyer today is more conversant with the important details of truck operation and maintenance than ever before. A money-saving idea will often result in a sale.

Readers have secured many valuable suggestions from the series of ideas published. We want more useful hints and will pay \$5 for each new idea accepted. Give exact dimensions of parts to be made to enable other readers to duplicate the device.

No. 135—Portable Tray

A portable tray as shown in illustration is a time-saver on bearing jobs. Shims are placed on hooks on an end board and bearing caps in the body of the tray. Possibility of mixing shims or of running the creeper over them, which are common when shims are placed on the floor, is eliminated.—Reader.

No. 136—Caps for Axle Ends

Caps for front wheel spindles and rear axle shafts prevent damage to threads when wheels are being applied or taken off. Brass or steel may be used for material for these caps. Pointed end of cap will be of help in replacing wheels by preventing the bearing cup from striking on the shoulder of the shaft.—S. H.

No. 137—Replacing Truck Wheels

A method of replacing truck wheels on the road where shop facilities are not available is indicated in the drawing. The wheel is tilted slightly and the hub bore started over the shaft. As the axle is lowered by the jack the wheel is brought to an upright position, carefully. The axle is raised again and the wheel tilted again. A second lowering will advance the wheel still further. Movements of axle and wheel are repeated until wheel is in place.—W. E. Warner, Campton Lodge, Shefford, Bedfordshire, England.

No. 138—Removing Washer From Ford Transmission Case

An effective method of removing a washer dropped in a Ford transmission case is shown. Drain the oil and wipe the magneto clean with a rag. While one person slowly turns the flywheel another strikes the underside of the crankcase a smart blow causing the washer to bounce up to one magnet. The washer can then be removed after a half revolution of the flywheel.—Davis Siehl Co., 4032 Hamilton Ave., Cincinnati, Ohio.

No. 140—Dummy Shaft Helps Clutch Assembly

Assembly of plate-type clutches can be expedited by use of a dummy clutch shaft. The plate is accurately aligned

with pilot bearing by use of the shaft. After assembly of clutch is complete the shaft is withdrawn and transmission and clutch shaft may be put in place with little trouble.—R. G. Dasse, 35 N. Union St., Burlington, Vt.

No. 139—Water Hose Support

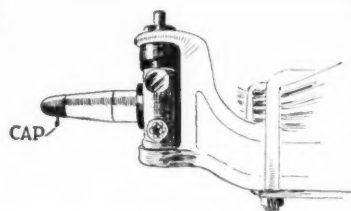
Filling a truck or bus radiator with a hose is an obvious time-saving plan but pulling a long hose over the floor beside a number of units under repair is somewhat of a drawback. This can

be overcome by stringing a heavy wire across the bench space and fastening the hose to it by heavy wire loops and hose fasteners.

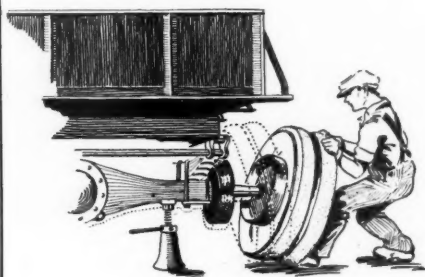
THE London General Omnibus Co., has developed a six-wheel bus chassis which has three differential gears, one to each axle of the rear truck and one between the two axles so that at no time can the whole torque on the transmission fall upon one axle.



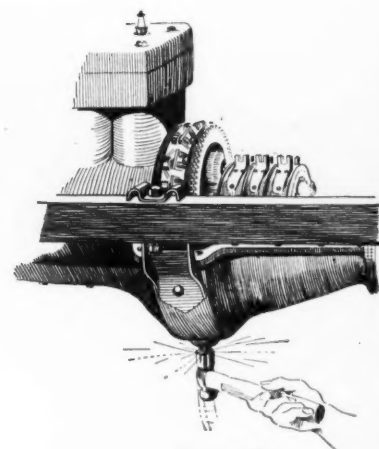
No. 135



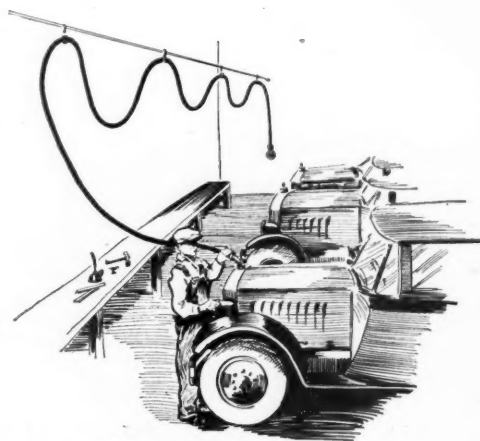
No. 136



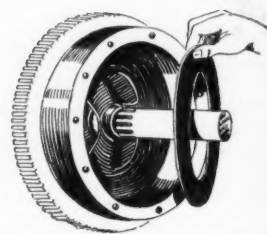
No. 137



No. 138



No. 139



No. 140

Bus Division's *Rapid Growth* Shows Industry Recognizes Need for Strong National Body

TRUE coordination of transportation is the general aim of all authorities. But in arriving at this goal, the bus industry and the steam and electric railways are each faced with problems peculiar to themselves which can best be solved by independent action on the part of each of these agencies.

Acceptance of this viewpoint undoubtedly accounts for the rapid growth of the Bus Division of the American Automobile Association which held its first national convention in Philadelphia on June 15 and 16. This division is the national organization of the bus industry and has for its sole purpose the promotion of bus transportation along lines that will react to the benefit of the public and the industry itself. It provides an entirely independent medium through which the bus industry can express its views, advance its interests and study its peculiar problems.

Growth in Membership

The Division now has a membership of 1500 operators running 12,000 buses, or about 40 per cent of those used as common carriers. This membership is representative of operators in Pennsylvania, New Jersey, Maryland, West Virginia, Virginia, North and South Carolina, Kentucky, Michigan, Ohio, Illinois, Texas, Arizona, California, Oregon, Washington, North Dakota, Nebraska and Oklahoma. By the end of the year, it is expected that 15 states will be added to this list and that the membership will be increased to 2500 operators having about 20,000 buses.

One of the most pleasing things about the organization work to date is the cooperation received from steam and electric railway interests operating buses, according to John M. Meighan, secretary of the Bus Division, who states that, although much has been said about the antagonism of these interests to bus operation, the Division has found only a desire on their part to cooperate in anything that would advance the interests of the bus industry. Many of the big electric utilities which are operating buses, already are members of state bus associations and these, of course, form the foundation on which the Division is building.

Although comparatively young, the

By Donald Blanchard

Division already has a number of important accomplishments to its credit, chief among which is the job it did before the Interstate Commerce Commission. In 1926, this commission held hearings in all parts of the country to secure basic facts for use in framing federal legislation regulating interstate highway transportation. As a result of the preliminary work done by the Bus Division cooperating with the state associations and local operators, a uniform and comprehensive picture of bus transportation was presented at these hearings. Mr. Meighan attended all of the hearings, assisting local representatives in the arrangement of their material and reporting the proceedings for the benefit of the industry as a whole.

The results of this investigation are expected to be published before the next session of Congress convenes and there is no doubt that bus regulation will be a center of interest at that time. However, the bus industry has less to fear from legislation at this session due to the mass of information on bus operation that was presented at the I. C. C. hearings than would be the case if there had been no organized effort to place the facts before the Commission. Moreover, the existence of a national, exclusively automotive organization such as the Bus Division is assurance that the bus industry will be adequately represented at that time.

The public frequently has complained at the lack of information regarding bus schedules and this is a condition that undoubtedly has caused considerable inconvenience to the public, particularly when trips involving two or more lines have been contemplated. In addition it has had a limiting effect on operating revenues. One of the activities on the program of the Bus Division is designed to remedy this condition. The remedy is in the form of a timetable showing the schedules of all bus lines operating in the area covered as well as a map showing the points reached.

The first of these time-tables has been issued and covers Maryland, Delaware, District of Columbia and adjacent parts of Virginia. It is ar-

ranged in much the same manner as a railway time-table and contains an index of all towns and cities listed in the tables. In addition it carries advertising of hotels and businesses in that territory.

Later, a bus tour service will be organized and steps will be taken to see that information regarding this form of travel receives wide public distribution. Other activities of the Division include the circulation of information regarding the activities of public service commissions, legislatures and the courts as well as of local and national trade associations. In addition, educational printed matter dealing with operation and regulation is circulated and publicity and advertising activities carried on.

Future Activity

The program of future activities includes carrying on research work in bus transportation, the compilation of comprehensive bus cost and operating statistics, etc. In addition, it is planned to formulate a uniform bus law for the regulation of intrastate carriers which will be available for the guidance of state legislatures in framing regulatory legislation. This work will help to eliminate the conflicting requirements now found in the laws of the various states.

The Division's program of field development work is being carried on by Tom Snyder, who so far this year has worked in Maryland, Kentucky, Oklahoma, Missouri, Nebraska, Iowa, Wisconsin and Minnesota. His future itinerary includes other states in the West, New England and the South. Mr. Snyder has had a wide experience in both organization and transportation work which makes him particularly valuable in the field in which he now is engaged.

Although considerably handicapped in some respects, the Bus Division already has shown its ability to be of constructive service to the bus industry. A national organization devoted solely to the promotion of bus transportation within its economic sphere is essential to the natural growth of this relatively new type of carrier to its ultimate place in our transportation system. Without a strong national organization such as the Bus Division is de-

(Turn to page 32, please)

What ANTI-KNOCK Fuels

A Non-Technical Discussion of the Gasolines and What May Be

By Donald

An increasing amount of consideration is being given to the advantages to be derived through the use of anti-knock fuels which are now available to operators in all parts of the country. In the accompanying article, a brief non-technical survey is presented of the various types of anti-knock fuels and their possibilities. You'll find it worth-while to know about these new fuels.

THAT familiar metallic "pinging" or knocking that develops when an engine is pulling under heavy load, can be eliminated by using anti-knock fuels which are now available nationally.

Abnormally rapid combustion of the fuel is responsible for this knocking which engineers call detonation. High pressure waves are produced by the excessive rate at which the mixture burns when fuel knocks develop and these waves striking the cylinder and combustion chamber walls cause the characteristic metallic knock.

Fuel Burns Too Fast

Of course, normally the mixture within the cylinder is consumed in a small fraction of a second after ignition and, up to a certain point, rapid combustion increases power and decreases fuel consumption. But beyond that point, fuel knocks develop, with consequent loss of power, increased wear and tear on the powerplant and lower fuel efficiency. Moreover, the performance of the engine is less satisfactory generally, and maintenance costs are increased, for one reason because carbon removal is necessary at more frequent intervals than would be the case if it were not for the fuel knocks.

Anti-knock fuels have the desirable characteristic that they prevent the rate of combustion from rising to a point where detonation develops and consequently the ill effects of this phenomenon are avoided. These fuels include Ethyl gasoline, specially cracked gasolines and benzol blends.

Ethyl gasoline is simply ordinary gasoline of good quality with which Ethyl fluid is mixed in the approximate proportion of one teaspoonful per gallon. This fuel owes its anti-knock qualities to the tetraethyl lead which is one of the constituents of the fluid and which holds the rate of combustion below the detonating point. Other ingredients of the fluid are ethylene dibromide which prevents the formation of lead oxide during combustion which would otherwise deposit on the spark plug electrodes, valve seats and valve stems; halowax oil which provides valve stem lubrication, and red aniline dye added to identify the fuel. None of these ingredients has any harmful effect on the engine. Carbon deposits in an engine using this fuel are sometimes a light gray or reddish brown and, in some cases, the oil turns a chocolate brown, but neither of these differences has any significance.

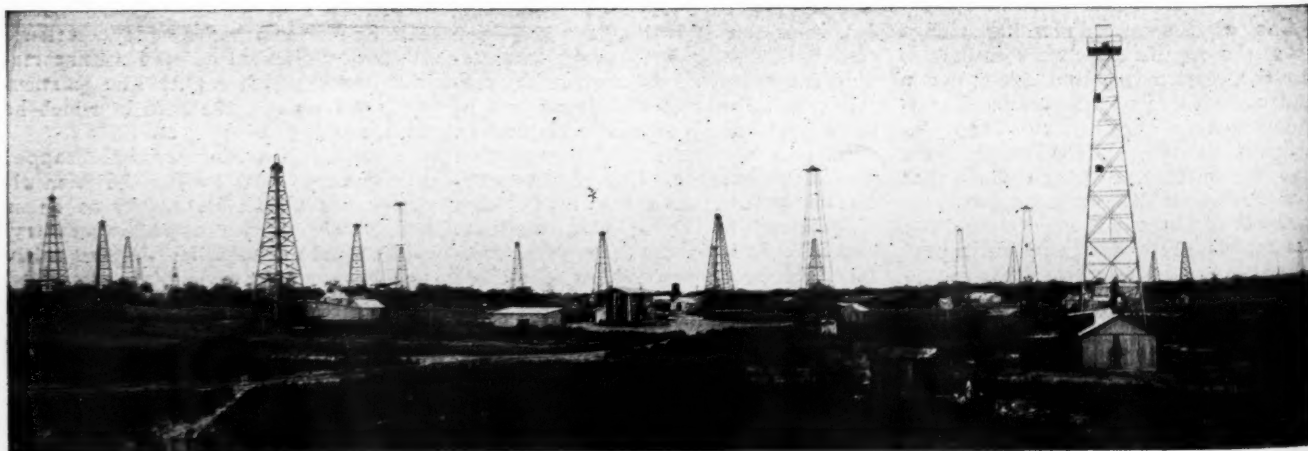
Just why the specially cracked fuels such as Sunoco Blue Gas, Gulf No Nox and Sinclair H. C., show excellent anti-knock qualities is not known definitely except that, as a result of the cracking process, new compounds are formed in the fuel which do not knock as readily as do some of the constituents of the original gasoline. Consequently the cracking process improves the anti-knock qualities. It is possible that the improvement is due to the formation

of what the chemists call naphthenes and benzenes, which are known to be highly resistant to detonation, but the fuel technicians are not in agreement on this point. From the operator's standpoint, the fact that specially cracked gasoline of superior anti-knock qualities, is available and that he can use it to advantage is sufficient.

Some Facts About Gasoline

Gasoline is a mixture of compounds and its composition varies with the field from which it is obtained. As a result, the anti-knock quality of ordinary straight run fuels varies also. California crude, in general, will give gasoline of good anti-knock quality, Oklahoma crude a poor one with Texas crude somewhere in between. Crude petroleum contains paraffins, naphthenes and benzenes. Paraffins as a class are bad detonators, naphthenes much better and benzenes best of all. Consequently, straight run gasoline produced from crudes containing a small proportion of naphthenes or benzenes will not produce as good fuel from a knocking standpoint as one made from a crude containing a higher percentage of naphthenes or benzenes. This explains why some straight run gasolines do not knock as readily as others. It also throws further light on the anti-knock quality of the specially cracked gasoline and of benzol blend fuels.

As their name implies, benzol blends consist of gasoline mixed with sufficient benzol to secure the desired anti-knock



Mean to Motor Transport

*Various Types of Anti-Knock
Expected From Them.*

Blanchard

qualities. Benzol is produced as a by-product in coke manufacture and consists of a number of compounds several of which help to prevent detonation. The most important of these is benzene which, as previously stated, does not detonate readily. Amoco and Betholine are typical of this class of fuels.

Where anti-knock fuels sell at a premium above the price of ordinary fuels, the operator is confronted with the problem of weighing this increased cost per gallon against the advantages to be gained. The knocking which the anti-knock fuels eliminate, represents wasted power and consequently, by using the non-detonating gasoline this waste is saved, with resultant increase in both power and gasoline mileage. Just what this saving will amount to is difficult to say, but some comparative tests have shown the increase in gasoline mileage to be over 10 per cent although such a large saving probably is not to be expected in all cases.

Spark Timing

In addition, because knocking is absent, it is unnecessary to retard the spark to eliminate it and this factor has an effect on power and economy. Moreover, the amount of gearshifting is reduced as sometimes the driver will shift to a lower gear on a grade or to get faster acceleration, to increase the speed of the engine and get it out of the knocking range. This advantage also has a favorable effect on power, economy, ease of operation and the mind of the driver of the vehicle.

Knocking is most noticeable at low engine speed and heavy loads, because under these conditions compression pressures are highest and it is the compression pressure which determines almost entirely whether knocking will develop. In the first place, under heavy load the throttle is wide open and at low engine speeds, the mixture velocity through the manifold and valves is small. Consequently, under these conditions, there is less resistance to the flow of the mixture and the cylinders are more nearly filled on the suction stroke than is the case at higher engine speeds or part throttle openings. As the engine speed goes up, the mixture velocity in the manifolds and through the valves increases, and consequently, the resistance offered by these parts to the flow of the mixture rises. This tends to limit the amount of mixture that gets into the cylinder. A partly closed throttle has a similar effect.

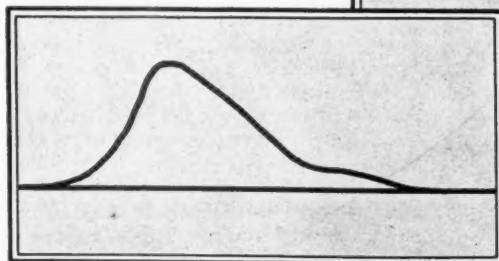
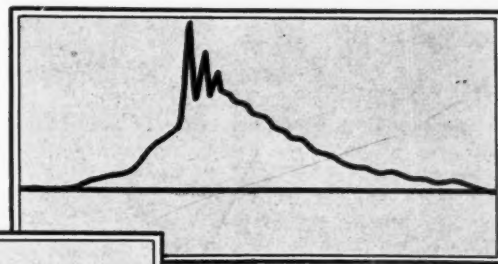
It follows, therefore, that at low engine speeds and wide open throttle the pressure of the mixture at end of the compression stroke is higher, because the cylinder is more completely

filled during the suction stroke, than is the compression pressure at higher engine speeds or at part throttle, under which conditions the cylinder is less completely filled during the suction stroke. Consequently conditions are most favorable for knocking to develop when the engine is operating under heavy loads at low speeds.

Carbon Removal

Aside from its other effects, carbon formation tends to reduce the volume of the combustion chamber and thus to increase the compression of the engine. Any carbon which forms on the top of the piston or the combustion chamber wall obviously reduces the space which can be occupied by the compressed mixture. Or, in other words, when carbon is present, the mixture is compressed into a smaller volume and the compression pressure is increased, thus creating a condition favorable to knocking. As the anti-knock fuels prevent the knock, it is necessary to remove carbon at less frequent intervals, which has an effect on maintenance costs.

(Turn to page 32, please)



How the pressure varies within the cylinder when there is knocking (above) and when it is absent (below), as the piston moves downward



New Truck Models of the Month

Relay

NEW 2½-3 and 3½-ton capacity models designated respectively as the 50-A and the 70-A are now being produced by the Relay Co., Wabash, Ind. Both models have Relay Drive rear axles and six-cylinder engines.

Both of the new jobs have Buda L-head engines with four main bearings, full pressure lubrication and pump circulation of the cooling water. The engine in the smaller model, 50-A, has a 3¼-in. bore and 5-in. stroke, and its output is stated to be 66 hp. at 2200 r.p.m. The engine in the 70-A is a 4 x 5½ model developing 75 hp. at 2300 r.p.m. Eisemann high tension magnetos and Zenith 1½ in. carburetors are standard in both cases.

A Borg & Beck 12 in. single dry plate is employed on both models. On the 50-A, the transmission is a four-speed Brown-Lipe mounted in unit with the engine. The larger model uses an amidships-mounted Brown-Lipe transmission providing seven forward and two reverse speeds except on the 136 in. wheelbase chassis which has a unit power plant with a four-speed Fuller transmission. Tubular propeller shafts with oil retaining, metal universals are common to both jobs.

Relay drive rear axles are employed in both models, the 50-A having a standard reduction of 9.28 to 1 and optional ratios of 7.75 and 11.6 while the standard ratio on the 70-A is 8.53 to 1 with optional reductions of 9.18 and 9.95 to one available. The initial reduction is

through spiral bevel gears which drive transverse jackshafts on the ends of which are pinions meshing with circular track gears mounted on the wheels. Driving thrust is taken through radius rods.

By means of the Relay Drive, when road resistance is suddenly increased by an obstacle, power from the engine is kept constant, although additional power is required to overcome the obstruction. The additional power required, automatically determined by the mass and nature of the obstruction, is derived from the momentum of the load. When the wheels meet an obstruction, they slow down or stop, but the truck and its load due to their momentum, move forward and upward by means of the pinions rolling up the circular track until the weight of the pinions is sufficient to roll the wheels forward and cause them to climb over the obstruction. One of the accompanying illustrations shows how this action, which is said to give the Relay truck unusual pulling power, takes place.

Emergency brakes act internally on rear wheel drum on both models with the service brake acting on the driveshaft. On the smaller model, a disk type, driveshaft brake is employed while the larger job has an external shoe brake. Semi-elliptic springs of silico-manganese are employed, the sizes being 42 x 2½ in. with eleven leaves front and 54 x 3 in. with 15 leaves rear on the 50-A, and 46 x 3 in. with 12 leaves and 60 x 4 in. with 13 leaves respectively on the 70-A. Mathews cast metal, spoke wheels are

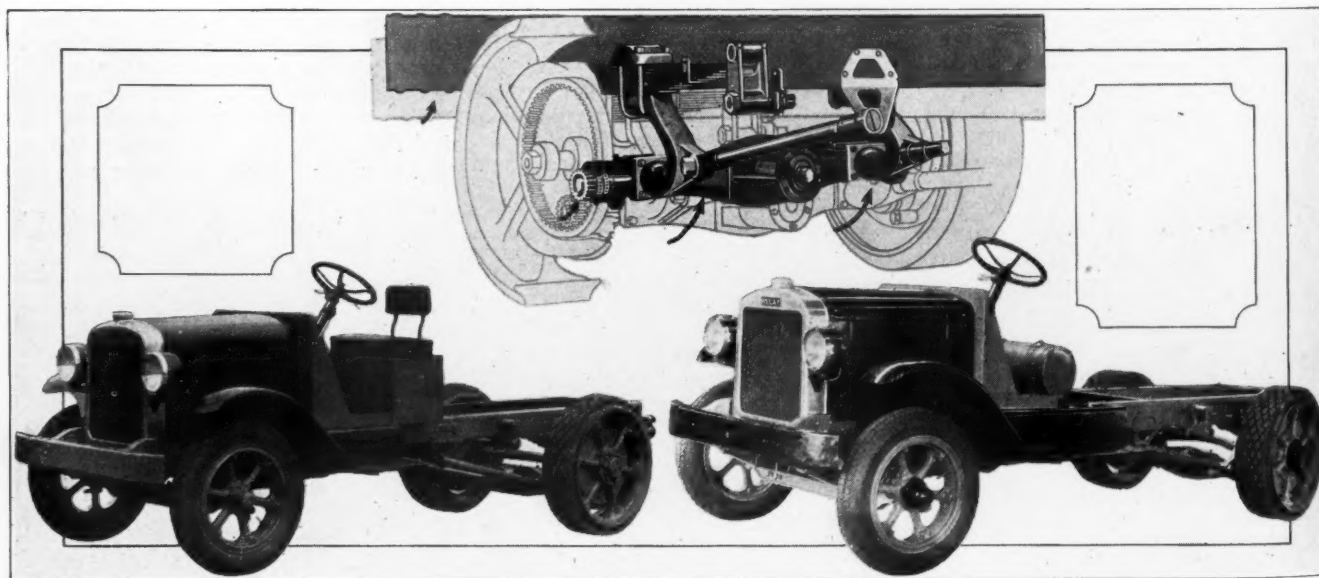
standard in both cases. The front tires are 36 x 6 in. pneumatics with 40 x 10 in. solids on the rear of the 50-A and 40 x 14 in. solids on the 70-A. Ross steering gears are used on both jobs with a 20 in. wheel on the smaller model and a 22 in. wheel on the larger. The 50-A has 7 in. deep side rails with 3½ in. flanges, pressed from ¼ in. stock while the 70-A has 8½ in. side channels of 5/16 in. stock with 3½ in. flanges.

Regular equipment includes electric starting and lighting, Alemite chassis lubrication, channel bumper, black enamel fenders, running boards, speedometer and other items.

The standard wheelbase of the 50-A is 156 in. with options of 136, 175 and 192 in. and the range of chassis weights is from 6200 to 6415 lbs. The 70-A has a standard wheelbase of 175 in. with options of 136, 156 and 192 in. and a range of chassis weight of from 8450 to 8700 lbs.

Reo

AN entire new line of Speedwagons consisting of nine models, ranging from 1000 lb. to three tons and with wheelbases of 114 in. to 175 in. will shortly be placed on the market by the Reo Motor Car Co. These models are all powered with six-cylinder engines, are equipped with four wheel brakes and are designed to meet the need for trucks able to keep up with passenger cars on through highways.



New Relay models. The 2½-3 ton model is shown at the left and the 3½ ton job at the right. Both have the "Relay Drive" type of rear axle, a phantom view of which is shown above

Following the Speedwagon Junior, listed at \$1,085, described in the May issue, details are now available on the new 1½ ton model.

Three body types are available on the new 1½ ton model, these including a stake body listing at \$1,620, an express body listing at \$1,580 and an express body fitted with a canopy listing at \$1,605. The price of the chassis alone is \$1,345 while the chassis with the cab is priced at \$1,495.

The engine in the new 1½ ton job is stated to develop 50 hp. at 2000 r.p.m. and has an F head, the chrome nickel steel inlet valves being located in the head and the sil-chrome exhaust valves at the side. The design of this power plant is based on the original Reo T-6 engine. The cylinder block and crankcase upper half are in one iron casting with the lower half of corrugated aluminum. Front end drive is by means of helical gears, the main and idler gears being of fabric for quietness. The crankshaft is balanced and is supported in four main bearings of 2¼ in. diameter. Pistons are Lynite with .9843 in. pins. Oil is supplied under pressure to the main bearings, timing gears and rocker arms and by splash to the connecting rods, camshaft bearings and cylinder walls. Cooling water is circulated by centrifugal pump. A portion of the carburetor intake air is drawn from the crankcase, thus providing crankcase ventilation. Two-unit electric starting-lighting with starter mounted at the right side of the bell housing, is standard equipment as Tilt-Ray head lamps which are controlled by a switch on the steering column.

Power is transmitted from the engine through a 12-in. single dry plate clutch, three speed transmission and tubular propeller shaft with metallic universals to a spiral bevel, semi-floating rear axle with a reduction of 5.2 to 1. The brake drums on the front wheels are 2 x 14½ in. and on the rear wheels 3 x 14½ in. The emergency brake is an external type acting on 3½ x 9 in. drum on the driveshaft.

The steering gear is an adjustable bevel pinion and sector type with intermediate gear and is operated by an 18-in. diameter wheel. The turning radius is 24 ft.

The new Divco truck may be operated from either side as well as from the driver's seat

The chassis is 196 5/16 in. long and 68 in. wide overall. From the dash back, the length is 145½ in. and the frame width is 40½ in. Springs are semi-elliptics, 38 x 2 in. front and 50 x 2½ in. rear. Chassis lubrication is by the Myers magazine system. Gasoline capacity is 18 gal. except on the panel body model on which it is 15.7 gal. Oil and water capacities are 7 quarts and 5 gal. respectively. A tire carrier is provided at the rear under the frame.

Divco

A NEW truck known as the Divco, which may be operated from the driver's seat or from platforms located on either side about midway between the wheels, has been developed by the Divco-Detroit Corp., especially for house-to-house and store-to-store delivery service.

The wheelbase of the new truck is 86 in. and the engine, clutch, transmission, axles, etc., are employed as in conventional design except that the engine is mounted over the front axle and under the driver's seat.

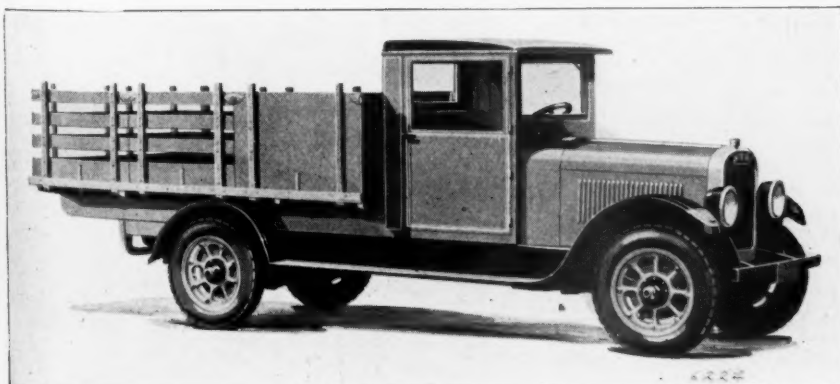
In going to and from the point of delivery, the driver operates the truck from a forward-left-hand driving position in the conventional manner. The radical departure in the design is that when making deliveries the truck may be driven from the platform on either side. This is accomplished by providing duplicate controls at each platform which are inter-connected with the conventional controls at the driver's seat. On each side of the frame are mounted clutch and brake pedals and the gear-

shift lever which has a tube mounted on it with a handle on the top controlling the throttle. In the center of the truck midway between the platforms is a steering shaft which is readily accessible from either side. This shaft is interconnected with the front steering gear. The first two inches of travel of the clutch pedal releases the clutch while further travel applies one set of brakes. The other set of brakes also are applied by pedal action. Both sets of brakes are located at the rear wheels.

The maximum operating speed in high is 18 m.p.h. corresponding to an engine speed of 1400 r.p.m. When making deliveries, the speed will range up to 8 m.p.h. Tests on milk routes varying in length from 10 to 50 miles and with 135 to 350 stops are said to show a total delivery cost of 10 cents per mile.

The engine is a Continental industrial type with 3¾ in. bore and 4¼ in. stroke. A special generator and ignition system is employed because of the fact that the engine is idling a great portion of the time so that high generator output at low speeds is essential. The starter is a six-pole design with Bendix engagement. Provision is made for controlling the heat supply to the incoming mixture. Other equipment includes a vacuum type governor and an oil filter. The clutch is a 10 in. single plate unit. The transmission provides three speeds forward and reverse and is conventional except for its cover which is modified to provide for control from either side as well as from the conventional position. The rear axle is a three-quarter floating bevel gear unit with a reduction of 7¼ to 1. Disk wheels are employed with 30 x 5 in. high pressure tires. The turning circle of the vehicle is 32 feet.

The frame side rails are 5 in. deep with 1¼ in. flanges and five cross-members are employed. Semi-elliptic springs, 2¼ in. wide, are used front and rear with nickel steel center bolts and clips. Fenders, operating platforms and front and rear bumpers are all a part of the frame construction. Equipment includes electric lighting, horn button at each driving position, ammeter, oil and gasoline gages. The chassis is lubricated by oil from cups with wick feed.

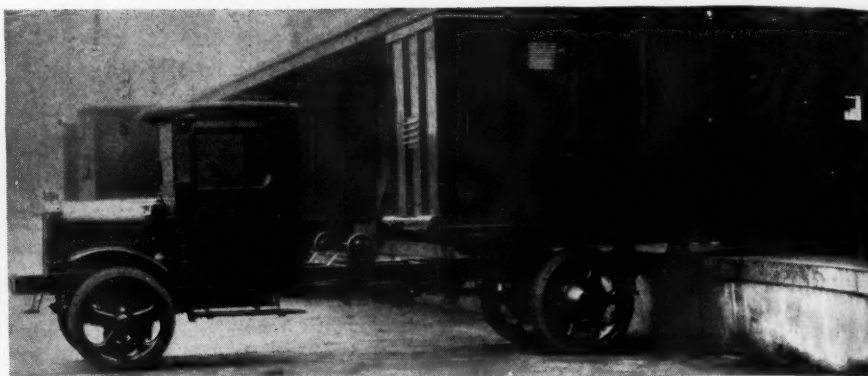


Four-wheel brakes and a six-cylinder engine are among the features of this new 1½ ton model Reo Speed Wagon

American Coach

THE American Coach and Body Co., Cleveland, is in production with two general types of roll-off or demountable bodies. The first is designed for installations where the bodies are pulled off by man power and the other for larger installations where it is desired to haul bodies a considerable distance, or where the number of units is sufficiently large to warrant the use of an electric truck. The mechanism, however, is fundamentally alike on the two types.

The mechanism which permits the removal of the body is of simple construction and adaptable to standard truck chassis. When on the chassis the body is firmly locked in position. Removals do require the use of permanent fixtures on the platform. The body is of metal, with the frame structure of formed-steel sections, and the panels and roof of either steel or aluminum. Lift hooks are furnished for use when it is desired to lift the bodies by crane.



Illustrating the "roll-off" demountable body now being made by the American Coach and Body Co.

stretcher level steel mounted over a solid heavily padded base. This provides a smooth surface for painting and lettering. Mouldings are formed into steel panels to eliminate loosening and joint chipping. The new bodies are adapted for mounting on 35 different 1-1½ ton trucks.

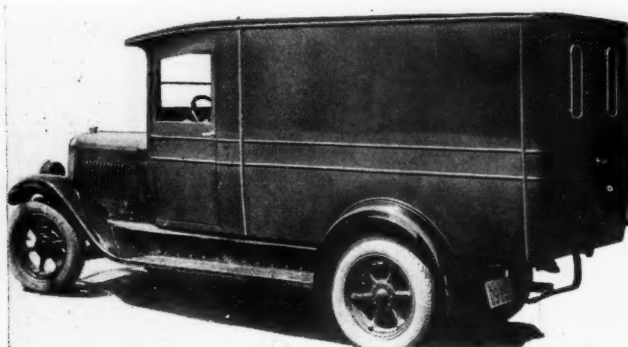
Six-Wheel

TWO entirely separate brake systems are now employed on the four drive wheels of the Safeway bus chassis manufactured by The Six Wheel Co., Philadelphia, Pa. The service brake is operated either by Westinghouse air system or Bragg-Kliesrath booster, while the emergency brake is operated by a separate B-K booster system.

Each system operates two independent brake shoes on each of the four drive wheels and comprise 530 sq. in. of braking area, so that in the combined systems there are 16 brake shoes with 1060 sq. in. of braking area. All hinge pins and wearing parts of the brake assembly are lubricated through magazine oilers which hold enough lubricant to oil the mechanism for about 3000 miles.

Aluminum floor boards are now being used, with cast aluminum transmission cover and a cast aluminum instrument board in which all instruments are grouped under glass after the practice now commonly followed by passenger car designers.

The battery is now located in a metal box which furnishes a permanent support for the driver's seat. Duralumin has been substituted for aluminum in the crankcase construction to gain greater strength without sacrifice of weight. Crankshafts are counterbalanced and vibration dampers and ventilated clutches are now standard.



One of the new Hoover Stel-Kote Uni-Bilt bodies

Hoover

UNIT type of construction, which permits assembly of many different designs of truck bodies from standardized units and simplifies repairs, features a new line of commercial bodies, known as Stel-Kote Uni-Bilt, recently introduced by the Hoover Body Co., York, Pa. A sheet steel covering is used on all exposed parts except the roof.

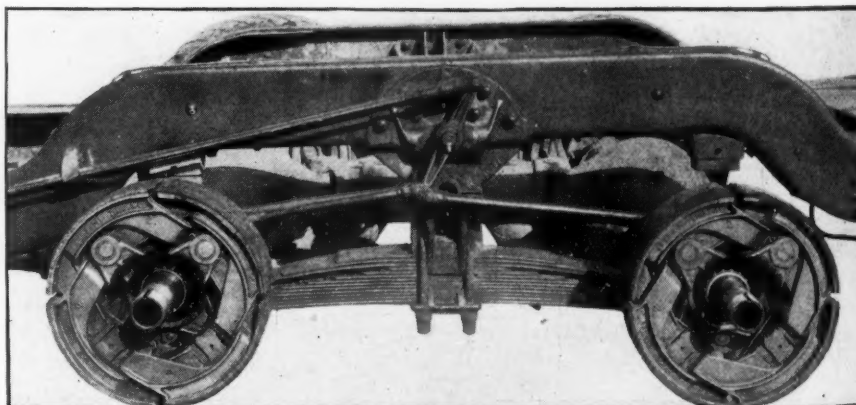
Bodies are assembled from standard front, side and rear sections and roofs. Optional lengths are 96 and 112 in. in back of the seat and either swelled or straight panels are furnished. Side sections are available in many models including ambulance, patrol, school bus, canopy top, casket, side loading and coach panels. Front sections are made in open design with glass protection, de luxe, half-door and full door.

A double post and lock joint construction permits quick and rigid assembly. Braces are made on jigs and sections are standardized to expedite repairs. Parts for all bodies are carried in stock so that bodies can be serviced like the chassis.

Panels are covered with 20-gage

Clinton

Clinton Motors Corp., Reading, Pa., has brought out two new bus-van chassis designed for furniture moving and other long distance service. Model 85-6 has a six-cylinder, 3 x 5½ in. engine while the 55-6 has a six-cylinder, 3¾ x 5 in. power plant. Four wheel brakes and pneumatic tires on Van metal wheels are regular equipment on both models.



Detail of dual brake system of Six Wheel bus chassis. Note magazine oilers for automatic lubrication of wearing parts

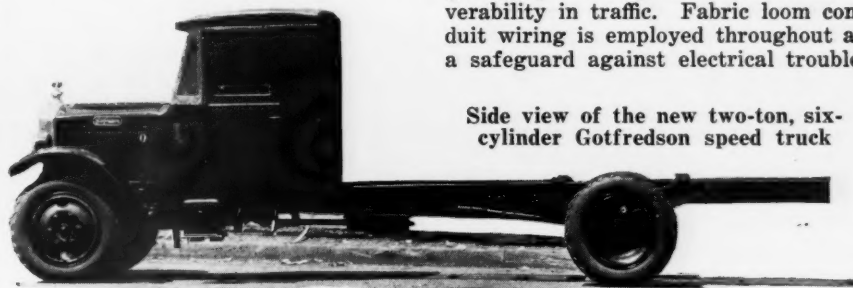
Gotfredson

THE latest addition to the Godfredson line is model 36, a fast low, six-cylinder job with a rated capacity of two tons. It is powered with a heavy duty Buda engine and power is transmitted through a Brown-Lipe transmission with either three or four speed changes to a Timken full-floating, bevel drive rear axle equipped with Bendix brakes. To relieve the springs of driving thrust radius rods are employed.

This model is mounted on pneumatic tires with either singles or duals at the rear and is built in three wheelbase

lengths. The frame side rails are 7 in. deep and are pressed from ¼ in. stock.

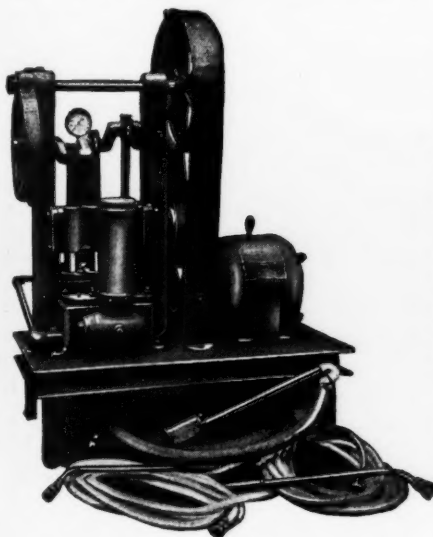
Auxiliary springs are regular equipment. The steering gear is designed to give easy steering as well as maneuverability in traffic. Fabric loom conduit wiring is employed throughout as a safeguard against electrical trouble.



Side view of the new two-ton, six-cylinder Gotfredson speed truck

Kellogg Heavy Duty Car Washing Unit

ENGINEERS of the Kellogg Mfg. Co., Rochester, N. Y., have developed a new two-gun, heavy duty car washing unit. This unit has a high pressure pump developed especially for car washing; it is compact and mounted on a steel platform. Installation is



Kellogg two-gun car washer

simple, requiring only connection of water intake and wiring to electric motor.

The gun has a variable spray control, a simple twist producing a 250-300 lb. stream of water, or a fine mist.

A washing solution may be used, as a two-way valve with suction hose and strainer is furnished with each outfit, permitting a rapid change from clean water to solution.

Each Kellogg Washing Unit is equipped with two spray guns which permit two men to work on the same vehicle at one time. Prices range from \$625 to \$700 f.o.b. according to motor used.

Modine Unit Heater

A SELF-CONTAINED unit heater is being manufactured by the Modine Mfg. Co., Racine, Wis.

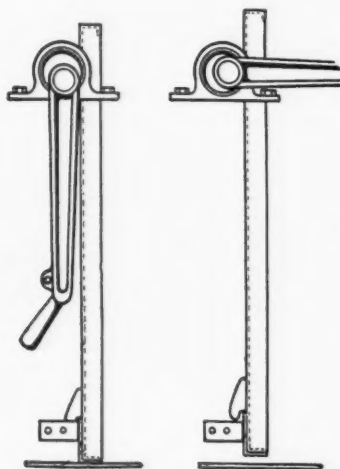
Each unit consists of a condenser, manifold and frame assembly and mo-

tor and fan assembly. Due to light weight, 125 lb., recommended mounting is by suspension from a steam heating line or hot water pipe, no brackets or braces being required. The heated air stream may be directed vertically or horizontally after installation. Price f.o.b. Racine is \$175, including electric motor.

Heil Batch Boards Operate on Eccentric Principle

SWINGING partitions, or batch boards for dump bodies, are being manufactured by the Heil Co., Milwaukee, Wis., for use in any make of dump body. The operating mechanism, which was developed by Heil engineers, has been patented. It is based on the use of an eccentric to raise and lower the partition to open and close it. When closed the partition is retained in position by a latch near the bottom. On the handle is an eccentric, which when rotated one-quarter turn, lifts the partition one inch which is enough to release the latch and allow the batch to be dumped.

The partitions are formed of a divider plate of steel flanged over all edges to give greater stiffness. They are attached to the upper flange of the body by means of brackets.

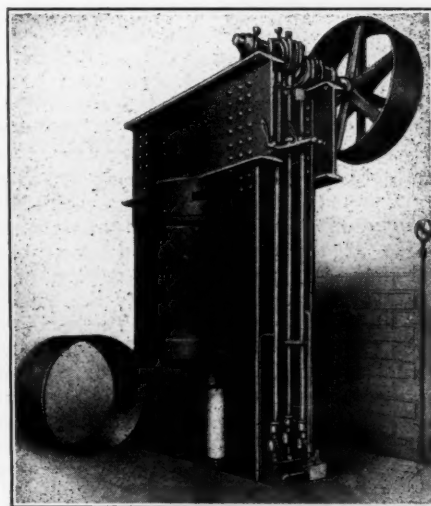


Showing closed and open positions of Heil batch boards

W-S-M Press for 14-in. Tires Has Quick-Acting Lift

A 300-TON press with sufficient travel to place or remove 14-in. tires in one operation, is being manufactured by the Wellman-Seaver-Morgan Co., Cleveland, Ohio.

The new press has a stroke of 37 in., which enables it to handle the



W-S-M 300-ton tire press

widest truck tires without stopping to change rings. A quick-acting oil-air pressure system is employed to move the lower platen quickly to contact with the wheel. This feature saves ten minutes on each wheel, according to the maker.

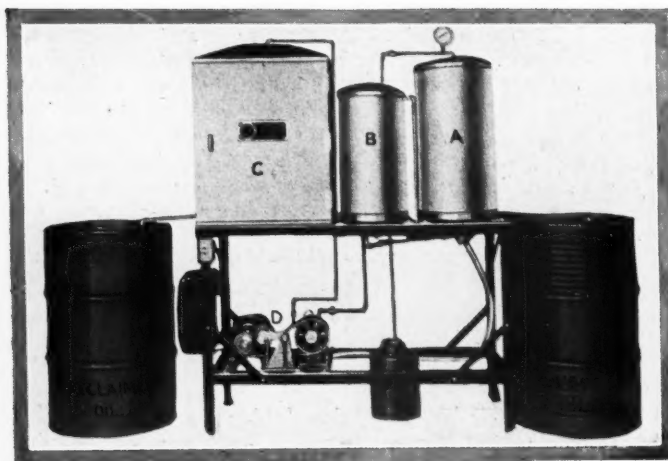
The pump is of the triple-cylinder single-acting type driven by overhead eccentrics and pipe rods.

The ram may be lowered with the pump in operation.

Power required for the press is 7½ hp. Motor or line shaft drive are supplied by the purchaser.

W. C. Mackenzie has been appointed chief engineer of the Acme Motor Truck Co., Cadillac, Mich. Mr. Mackenzie was formerly assistant chief engineer of the Garford Truck Co.

Albert A. Lau has been appointed sales manager of the Pak-Age-Car Motor Corp., Chicago, manufacturers of the Pak-Age-Car delivery chassis.



Skinner Oil Reclaimer

AN oil reclaiming outfit specially designed for fleet owner use has been placed on the market by the Skinner Automotive Device Co., Inc., 1637 Lafayette Blvd., Detroit, Mich.

Purification process consists of evaporation of water, gasoline and other diluting elements under vacuum and aeration, with comparatively low temperature. On the way to the filter tank the hot oil is passed through a pre-heater where it heats the incoming dirty oil. Special filters are used to remove dirt and other foreign matter from the oil. The unit is automatic in operation and no handling of oil is required. Dirty oil is placed in a drum on one side of the apparatus and clean oil drains into another drum on the opposite side. The capacity of the outfit is 6 gallons per hour. The maker claims that oil can be reclaimed at a total cost of 7 cents per gallon. Laboratory tests of reclaimed oil show characteristics closely resembling the original oil.

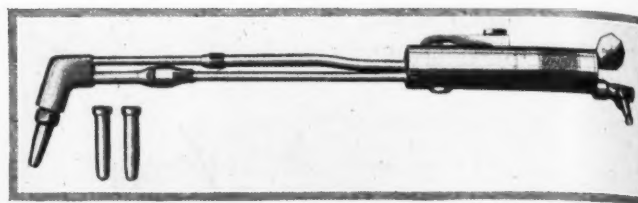
Dall Chamfering Machine

THE Dall Motors Parts Co., Cleveland, Ohio, is offering a chamfering machine that can be operated from power obtained through an ordinary lamp socket, or can be placed on a lathe and driven from line shafting.

This machine will accommodate pistons up to $5\frac{1}{4}$ in. diameter, chamfering the open end in much less than a minute. Piston pin holes can also be reamed on this machine.



This machine will meet needs up to $5\frac{1}{4}$ in. diameter



Milburn Illuminating Gas Torch

Left: — Reclaims oil at 7 cents per gal.

Right: — Cuts metal with illuminating gas

A METAL cutting torch using illuminating gas, natural gas or coke oven gas with oxygen, has been designed by the Alexander Milburn Co., 1416 West Baltimore St., Baltimore, Md.

A cutting speed of one foot per minute on three-inch plate was achieved in a recent test, according to report of the makers. By-product gas was used at ordinary line pressure without boosting and with oxygen at 40 lb. A lack of case-hardening of the cut metal is a desirable feature of the cutting.

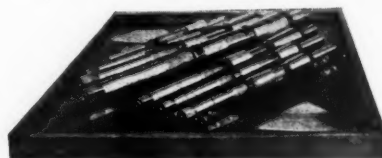
The Milburn torch is made of bronze forgings and seamless tubing. Tips are supplied for all thicknesses of metal. They are made of copper and are designed to preheat the entering gases.

It is equipped with a four-jaw universal chuck and four chamfering reamers are supplied to meet all sizes up to the maximum size.

Included in the equipment are seven turning and grinding adapters that will turn and grind any piston up to the $5\frac{1}{4}$ in. limit.

Alvord-Polk Reamer Supports

A REAMER mounting which holds a reamer in such a manner that the cutter blades are not in contact with any material is supplied by the Alvord-Polk Tool Co., Millersburg, Pa., for use with reamers of its manufacture. Each

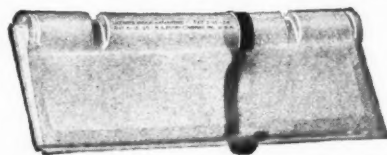


Clips support reamers for protection

mounting consists of two L-shaped clip members which may be attached to wall, tool board or side of parts bin. The clips engage the two end centers of the reamer body. Reamers are released by pushing the top inward. Reamers may be supported in either horizontal or vertical position.

Kilglare for Mirrors

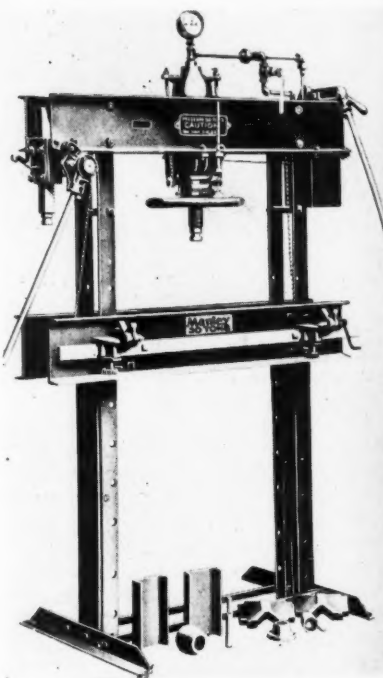
An attachment for rear view mirrors to cut off glare of headlights of following vehicles is the "Kilglare" recently put on the market by N. A. Petry Co.,



Cuts glare of rear view mirrors

Inc., 328 N. Randolph St., Philadelphia, Pa.

"Kilglare" is out of the way during the daytime. At night it is turned to cover the mirror surface and the optical green color eliminates glare. Price of the device is 75c.



Manley 30-ton hydraulic press

Manley Hydraulic Press

MANLEY MFG. CO. are making a 30-ton hydraulic press for work not requiring the capacity of their 60-ton hydraulic press. A winch operated table, depth gage, hand wheel, and rack and pinion press for light work are supplied.

The latter may be omitted if desired by purchaser. Price with rack and pinion attachment is \$150. Test centers are \$15 extra and pressure gage \$10.

Multibestos Brake Relining Equipment

Multibestos brake lining equipment, which is secured under the Multibestos Service Station franchise offered by the Multibestos Co., Walpole, Mass., is designed to use any type of tubular rivets. It is provided with a complete motor driven brake relining unit that will punch out old rivets from lining and band, drill and countersink the new lining at one operation, and head over the new rivet.

The equipment will handle passenger car brake bands, truck shoes, clutch disks and transmission bands for Fords.

Drive is direct through a set of spur and spiral gears. Power is supplied by a 1/4 hp., 60 cycle, 110 volt, A. C. motor. It is equipped with a tumbler switch and the motor is arranged to operate from an electric light socket, all connections and a 5 ft. cord being furnished. The outfit is designed for attachment to a wall and takes up but little room. It is 54 in. high, 10 in. wide, extends 12 in. from the wall and weighs crated 100 lb. It is standardly equipped with 11 tools, such as dies, punches, rosette, riveter, locating guide, drill, etc.

The company also offers a foot-power brake relining machine known as Series C. This machine removes old rivets, punches the holes in new linings and clinches over the new rivets. It is standardly equipped with 7 tools.

The first machine is secured for \$60 under the service station franchise plan and the second machine \$15.



Left—Power-driven Multibestos brake reliner. Right—Foot-power machine

Fleming Combination Square

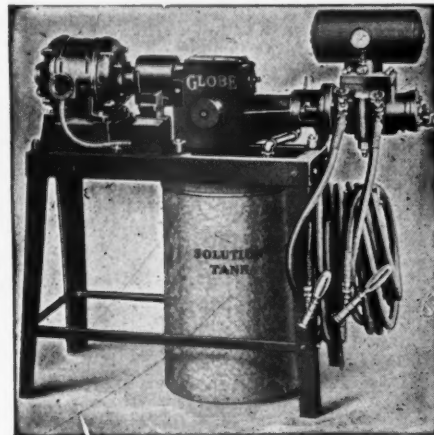
FLEMING MACHINE CO., Worcester, Mass., are making a combination square adapted for use in maintenance establishments. The square head contains a level and a scriber for marking metal surfaces. Price, \$3.



Combination square and scriber. The steel blade is 12 in. long

Globe Car Washer

A CAR washer incorporating unusual features of design is the Globe Simplex Hi-Pressure manufactured by the Globe Mfg. Co., Battle Creek, Mich. A single cylinder double-acting pump with center packed piston is used and it is driven by an electric motor by means of a worm drive unit which combines gear reduction and crankshaft. All working parts are enclosed and are lubricated automatically by flow of gear



All parts are inclosed and lubricated automatically

lubricant, as in a rear axle. No oil or grease cups are used. The worm drive eliminates pulleys, belts, chains or exposed gears. Timken bearings are employed on worm shaft and crankshaft.

A tank is provided for soap solution and suction can be switched from it to hot or cold water supply. The outfit has a capacity of two guns and automatic pressure control is furnished.

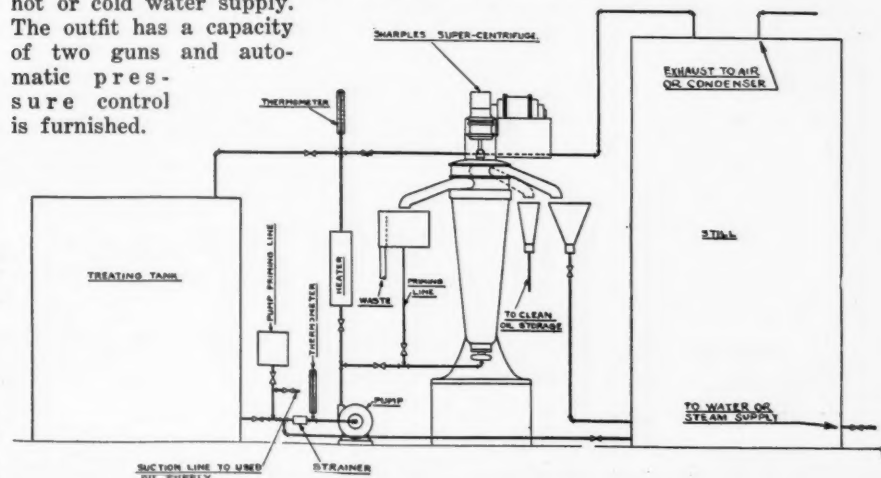


Diagram showing flow of old crankcase oil through the Sharples system in process of recovery

Sharples Crankcase Oil Reclaimer

A PROCESS for recovering lubricating oil from crankcase drainings has been developed by the Sharples Specialty Co., 23rd & Westmoreland Sts., Philadelphia. The reclaiming equipment which is designed particularly to meet the requirements of fleet owners is guaranteed to recover 95 per cent of the lubricating oil in crankcase drainings and to remove water, diluents, carbon and other heavy particles.

Centrifugal separation and distillation are employed in the reclaiming process. The former is accomplished in a super-centrifuge, a Sharples machine in which centrifugal force developed by the rapid rotation of a long, slender hollow cylinder is used to separate liquids of different specific gravities and to deposit solid particles on the interior surface of the cylinder.

A clarifying solution is added to drainings entering the apparatus and it is heated and agitated. The super-centrifuge separates the oil from the solution and the oil is discharged into a still where diluting elements are removed by evaporation. After treatment in the still the oil again is run through the centrifuge, adjusted for clarification.

Equipment is offered in three sizes capable of treating 50, 100 and 200 gal. per batch, to meet the requirements of large and small fleet owners. The apparatus may be adapted to use heat for the process from electric heaters, low pressure steam, electric and steam combined or from high pressure steam. Power may be supplied by line shaft, electric motor or high pressure steam.

Fleet owners are cautioned by the company against mixing transmission or rear axle lubricants with crankcase drainings which are to be reclaimed as these lubricants make purification of crankcase drainings difficult.

HASKELITE roofs, ad racks and dashes are being used in the 50 double deckers and 60 single deckers recently purchased by the Philadelphia Rapid Transit Company from the Yellow Coach Company.

Have You Heard That ~



THE truck output for the entire industry during the first four months of 1927 reached a total of 179,736 as compared with a total of 166,319 during the same period last year, or an increase of 8 per cent, according to figures presented by the National Automobile Chamber of Commerce. Alfred Reeves, general manager of the chamber says that these figures indicate that 1927 will establish a new truck production record.

Atterbury Motor Car Co. Buffalo, N. Y., reports an increase in business of 25 per cent for May, 1927, over the same month last year and 10 per cent over April, 1927.

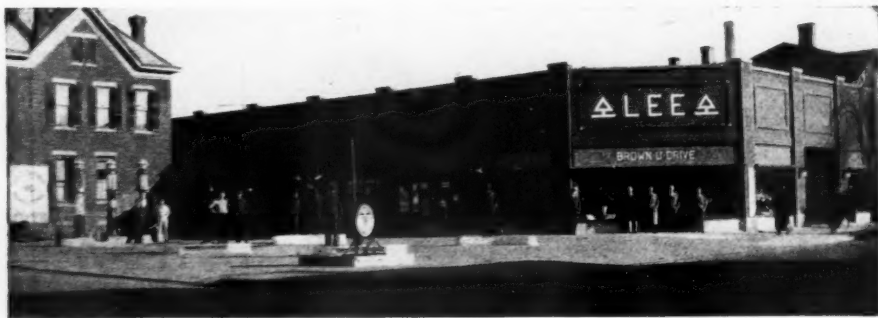
Indiana Truck Corp. reports that shipments for May, 1927, show an increase of 44 per cent over May, 1926, which followed an increase of 78 per cent in April over April, 1926.

APOWER steering device has been developed by the Bethlehem Steel Co. and applied to a heavy truck. Power is obtained from the engine and steering is affected by means of two frictional clutches. When the engine is not running direct mechanical action is provided.

Col. William Guy Wall, consulting engineer, was nominated for president of the Society of Automotive Engineers for 1928 at the annual summer meeting of the society in French Lick Springs. Wm. R. Strickland, of the Cadillac Motor Car Co., was nominated for vice-president.

ALINE of Willys-Knight trucks has been placed on the foreign market by the John N. Willys Export Corp. The line will be powered with six-cylinder engines and consist of three sizes, namely, 1½, 2 and 3 tons to retail from \$1485 to \$2440.

New Home of the Lee Tire Sales Co., Distributors, Evansville, Ind.



The building, attractively designed, covers nearly half a city block and meets every requirement necessary for quick and efficient tire service. It was erected by R. E. Rodgers, President, and Alvin R. Brown, Secretary and Treasurer

Gramm Launches Big Dealer Campaign

GRAMM Motors Inc., of Lima and Delphos, O., has started an extensive advertising and selling campaign designed to augment its dealer organization and to increase sales. Most of the sales effort will be concentrated on the 1½ ton Fast Express and the 2 and 2½ ton Fast Freighter models which are to be priced considerably lower than in the past, the new prices being \$1485, \$1955 and \$2785 respectively.

These reductions are made possible by a contract made with a large automobile manufacturing company under which Gramm will supply trucks for this company's export business. The resultant increase in production make the new prices possible.

In addition, the campaign provides for effective cooperation between the Gramm factory and its dealers, of a character that will increase both dealer sales and profits.

Price M. Davis has been elected president of the Stoughton Co., which was recently organized to take over the business of the Stoughton Wagon Co. F. J. Vea, president of the old company, becomes one of the directors. Operations of the new company will be concentrated on the Stoughton line of trucks, buses and commercial bodies.

SELDEN Truck Corp., Rochester, N. Y., announces the appointment of seven new dealers: H. G. Pendell, Inc., 1253 So. Hoover St., Los Angeles; G. G. White, 1253 Brandywine Ave., Phila.; Wood's Auto Service Co., 805 Pennsylvania Ave., Hagerstown, Md.; Harcourt Motor Co., 245 Broadway, Newburgh, N. Y.; Thomas Hillman, Mansfield, Ohio; W. E. Ellis, Findlay, Ohio; W. L. Poffinberger, Bellevue, Ohio; and C. M. Thorpe with headquarters at Standard Supply & Equipment Co. has been appointed district sales manager in Philadelphia and territory.

A new series of six-cylinder engines designed particularly for buses and trucks has been introduced by the Hercules Motors Corp., Canton, Ohio. The company also reports substantial increases in business in the first quarter.

THERE are now about 150,000 taxicabs in operation in the United States representing an investment of more than \$200,000,000 and a gross annual business of approximately \$517,000,000, according to John Weibley of the Pittsburgh Taximeter Co., in a recent address before the National Association of Taxicab Owners.

Theodore F. Merseles has been named president of the Johns-Manville Corp. and will take office July 1. Mr. Merseles is also president of Montgomery Ward & Co. H. E. Manville, now president, will become chairman of the board.

THE truck market continues favorable. According to estimates the truck output of May will equal that of April and continues to show up more favorably than the passenger car in comparison with 1926 figures. Considerable satisfaction is also noted as result of sustained good business, many of the smaller companies becoming more active.

Reports from the leading centers as a whole indicate healthy retail sales. In New York, while sales in the heavy duty field are somewhat below the volume of May, 1926, sales of the lighter grades have been very active. Most business, however, is on a sound basis both as to installment financing and trade-in allowances. The floods of the Mississippi valley while retarding passenger car sales has caused but little depression in the truck industry, due to the large amount of truck equipment used in the strengthening of the levees. A report from Dallas, Tex., states that truck sales show improvement, especially in the grain belts. Despite the heavy rains in Kansas City

territory which have placed various branches and dealers behind schedule, prospect lists are large, indicating good business as soon as weather conditions permit. Reports from two large centers in California, while differing, places Pacific Coast business on a satisfactory level. The truck market in Los Angeles is slow with sales under May last year, but about even with April. San Francisco, however, shows that used trucks are in demand and new trucks in small sizes are selling better than May of last year.

Donald Ross has been named vice-president in charge of finance of the Splittorf-Bethlehem Co. Mr. Ross was one of the assistants of the late Henry P. Davison, of J. P. Morgan & Co.

THE Steel Wheel Corp., Lansing, Mich., as executive licensee of balloon tire manufacture, has selected the B. F. Goodrich Company of Michigan as defendant in legal proceedings to test the validity of the Putnam patents covering the principle of construction involved in the production of balloon tires by filing a bill of complaint in the U. S. District Court of Michigan.

Thomas T. O'Brien has been appointed general sales manager of the Duplex Truck Co., which company has also announced the introduction of a new line of trucks comprising 1½, 2 and 3-ton trucks with four and six-cylinder engines. Mr. O'Brien is well known in the industry, having served with Overland, Garford, Oldsmobile and Reo in various executive capacities.

Virgil Jordan Refutes Business Cycle Theory

THE theory that business travels in cycles was refuted by arguments presented by Virgil Jordan in a recent address before the National Industrial Conference Board in New York City. Mr. Jordan said that business today can largely determine the extent and duration of the ordinary industrial fluctuations except under abnormal conditions such as floods, crop failures and unusual European situations.

David W. Roger, secretary and director of sales of the Federal-Mogul Corp., Detroit, Mich., announces that the new addition to the company's Detroit plant, which increases the plant facilities of the organization to meet increased sales, is complete and will shortly be in operation.

STATING that it was possible to get lower insurance rates in Massachusetts under the State Compulsory Insurance Law, Charles J. Innes, before the members of the Motor Truck Club of Massachusetts, cited facts and figures showing how truck men by forming a mutual liability insurance company of their own could get premiums 50 per cent lower than the state allows insurance companies to collect. A committee on insurance was selected headed by H. D. Church to investigate the matter and report at an early date.

DEALERS of the Studebaker Corp. will shortly be offered panel and screen bodies for mounting on the Studebaker Standard Six chassis. These jobs, which are now in production, are expected to fit in the market for delivery units for retail stores and shops requiring less than a ton capacity. The bodies were designed for attractiveness, for the work they are to perform and driver comfort. The two seats are of the folding coach type, upholstered in leather and the design is such to facilitate entrance to the body proper from the driver's compartment.

John R. Dean has taken over the management of the service department of Selden Truck Corp., Rochester, N. Y. George Foos has been promoted to the position of assistant service manager.

A DE-LUXE parlor coach seating 16 passengers is being manufactured by Graham Bros., Detroit, as an addition to their line of passenger vehicles. Seats are of the chair type constructed of steel tubing frame work with hardwood bases and covered with fibre wickwork. Upholstery is Spanish grain leather and air-filled coil spring cushions are used as sub-bases.

W. R. Angell, executive vice-president, Continental Motors Corp., reports that his company showed a production increase of 37.2 per cent in May, 1927, over May last year. Schedules for June show a still larger increase. According to the statement orders are entered for 29,965 engines against shipments of 19,413 for June, 1926, an increase of 54 per cent.

General business continues to offer encouraging signs to merchants of commercial vehicles. In building, for instance, contracts awarded throughout the country in April were only 3 per cent below the record sum reached in March and were 6 per cent higher than in April a year ago. These high levels, it would appear, must soon stimulate the market for heavy-duty trucks, at least to the point it reached a year ago. As a matter of fact, the slight recession in sales of heavy-duty trucks noted this year as compared with last was probably due to the abandonment of loose financing methods rather than to an actual curtailment of the market. The business that is being done now is on a more sound and profitable basis.

Building development, on the other hand, has been on a regional basis. Major gains in some of the Middle Atlantic states and in the

Business Maintains Its Place

Middle West and Texas have been partially offset by serious losses in the Southeast and to some extent in the Northwest and New England. The indexes of the general movement of commodities to the trade and into consumers' hands continue to show gains over a year ago. Chain store sales in May on the average were above the same period a year ago, though showing a minor seasonal recession from the April level.

Freight car loadings are approximately on a parity with 1926, despite the curtailed movement of coal due to the strike and to the large stocks in consumers' hands. There is indicated, therefore, an actual gain in general merchandise and L.C.L. freight.

Manufacturing gives evidence of maladjustment as between industries but general activity is on a relatively high level. Textile industry continues to improve and, while operations in the steel industry in May were down to 80 per cent capacity as compared with the 94 per cent at the high point in March, the reduction is regarded as mainly seasonal and a continued good volume of business is expected. Overproduction in other lines continues to be a source of disturbance, and this continues to be reflected in lower prices and a correspondingly expanded movement into consumers' hands rather than in a piling up of merchants' stocks.

Easy money continues to contribute to bullish enthusiasm not only in stocks but in relation to general business. Despite higher loans by banks, reserve ratio of the Federal Reserve system is higher than a year ago.

THE possibilities for widening the field of use for commercial vehicles was discussed by F. J. Scarr, of the Scarr Transportation Service, Inc., at a recent meeting of the truck members of the National Automobile Chamber of Commerce. Mr. Scarr was formerly motor truck transportation supervisor of the Pennsylvania Railroad.

Alfred P. Sloan, Jr., president of General Motors; William H. Woodin, president of American Car & Foundry Co. and Gerard Swope, president of the General Electric Co., have agreed to serve on a special committee of the National Better Business Bureau in suppressing financial and mercantile frauds for the protection of investor and consumer.

JAMES R. FITZPATRICK has been made vice-president of the Haskellite Manufacturing Corp. He will continue as secretary in charge of sales and member of the board of directors. Mr. Fitzpatrick has been a member of the organization since 1917 and served it in all capacities from factory manager to purchasing agent and sales manager.

John C. Talcott has been appointed chief engineer of the Pierce-Arrow Motor Car Company to succeed the late Charles Sheppy. Mr. Talcott has been associated with the company since 1909. W. W. Slaght has been advanced to the position of chief experimental engineer at the same time.

THREE executives of the Diamond T Motor Car Company were recently elevated to the positions of vice-presidents. They are: Sidney A. Cook, former secretary and service manager; E. J. Bush, general sales manager for several years; and C. A. Pierce, chief engineer and production manager.

D. P. Hess has been appointed assistant to the president of the Timken Roller Bearing Company with headquarters at Canton. Previous to his appointment Mr. Hess was manager of the company's Columbus plant for the last six years.

ALL the directors of the National Automobile Chamber of Commerce whose terms expired at the June meeting were reelected as well as all the officers, headed by Roy D. Chapin. The directors returned were A. J. Brosseau, E. R. Erskine, Alvan Macauley, W. E. Metzger and R. E. Olds.

Howard Winton, general branch manager of the Heil Co., was elected president of the Milwaukee Association of Industrial Advertisers at its annual business meeting. Mr. Winton served in the capacity of vice-president during the last year.

THE U. S. Chamber of Commerce has augmented its staff with five trade commissioners and one assistant to concentrate on automotive and transportation problems to assist the American industry in being well-informed on transportation conditions in foreign countries.

British Subsidiary for 6-Wheel Truck Users

THE British War Dept., has announced that it will pay a subsidy of £40 yearly for 3 years to users of 6-wheel trucks capable of carrying a load of 3 long tons and whose design meets with official specifications. These specifications have been drawn so that considerable latitude is allowed the designer in the way of general power, weight and size factors.

George G. Young has been appointed Philadelphia retail sales manager of the Philadelphia Branch of General Motors. Mr. Young, who comes from Boston, was formerly a passenger car distributor, superintendent for a large fleet of trucks and a member of the White sales staff.

THE U. S. Post Office Department has awarded contracts for 275 armored truck cabs for assembly on trucks now in service. Delivery of the first lot of 25 has been completed by Geo. B. Marx, Brooklyn, N. Y., and approximately 60 to 100 ordered from the American Coach and Body Co., Cleveland, have also been delivered. An additional contract for 150 cabs has been awarded to the Eddystone Steel Co., Eddystone, Pa. The cabs are being installed on the regular screen-body trucks, most of which are Fords.

P. J. Flaherty, president of the Johnson Bronze Co., New Castle, Pa., states that the outlook for the bronze bushing and bearing field is bright for the rest of the year and that production at the New Castle plant is at the highest point in its history.

SHOWS

Chicago	Nov. 7-12
Exposition, Coliseum, Automotive Equipment Association.	
*Chicago	Jan. 28-Feb. 4
National, Coliseum, National Automobile Chamber of Commerce.	
Cleveland	Oct. 3-7
Public Auditorium, American Electric Railway Ass'n.	
Cleveland	Nov. 14-19
Convention Hall, National Standard Parts Association.	
Cleveland	Jan. 9-14
American Road Builders' Ass'n.	
Des Moines	Feb. 20-25
Coliseum.	
Green Bay, Wis.	Aug. 29-Sept. 2
Auto Building.	
*New York	Jan. 7-14
National, Grand Central Palace, National Automobile Chamber of Commerce.	

*Will Have Special Shop Equipment Exhibit.

CONVENTIONS

American Electric Railway Association, Public Auditorium, Cleveland	Oct. 3-7
Automotive Equipment Association, Summer Convention, Multnomah Hotel, Portland, Ore.	June 27-July 2
Automotive Equipment Association, Coliseum, Chicago	Nov. 7-12
National Association of Automobile Show and Association Managers, Drake Hotel, Chicago	July 28-29
National Standard Parts Association, Hotel Hollenden, Cleveland ..	Nov. 14-19

HERTZ Drive-it-yourself Stations, Inc., in Chicago has added trucks to its rental service under the same conditions as passenger cars. In the new service the Chevrolet ton trucks and the new G.M.C. T-20 ton trucks with Buick engine are offered at rates ranging from 22 cents to 25 cents a mile, or at daily rates of \$7.50 to \$8.50. Discounts are allowed on weekly and monthly arrangements.

F. H. Landwehr, director of the Electric Auto-Lite Co., becomes president of the recently organized Prest-O-Lite Storage Battery Corp., which took over the battery division of the Prest-O-Lite Co., Inc. With J. H. McDuffee, vice-president, and J. B. Motley, secretary and treasurer, F. M. Coburn and F. M. Harrington, these five form the board of directors.

THE General Chromium Corp. has been organized by several leading companies in the electro-chemical industry, it was announced early in the month, for the consolidation of important patent rights in chromium plating and for the development of chromium plating process of great importance to the automotive industry. The process identified by the patents is called Duro-Chrome.

American Bosch Magneto Corp. reports net profits of \$42,782 after depreciation, etc., but before Federal taxes for the first quarter of 1927. This compares with \$138,908 for the same period in 1926.

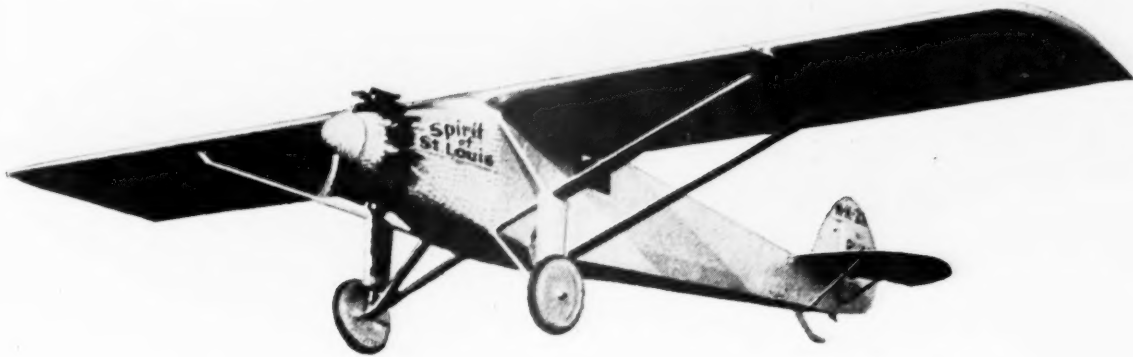
A TRAINING course in automotive merchandising has just been completed by the Greater Market Development Division of the Automotive Equipment Association. This course will cover all phases of automotive sales and service as they affect the after-markets.

L. H. Timmerman, 1398 Main Street, Buffalo, N. Y., has taken over the distribution of Standard and Fisher trucks and is devoting his entire time to this line which includes models from 1 to 10 tons inclusive.

SHIPMENTS of Graham Brothers trucks and commercial cars totaled 5718 units in May, according to an announcement made by Dodge Brothers, Inc. This production broke all previous monthly records for the year and showed a substantial increase over April.

The daily output at the Graham Brothers truck division plant of Dodge Brothers, Inc., has been jumped from 50 trucks and 225 bodies to 60 trucks and 300 bodies to meet demand of late spring, according to A. E. Cooney, general manager.

USES of the commercial vehicle in coordinated transportation and in the ice cream industry were shown by two motion picture films at a recent truck meeting of the National Automobile Chamber of Commerce. The meeting was presided over by Windsor T. White, chairman of the truck committee.



CONGRATULATING ~

Captain Charles Lindbergh on his heroic achievement

Bethlehem Alloy Steel Forgings used in Lindbergh's Engine

The following parts, made of Bethlehem Alloy Steel Drop Forgings, stood the test with Captain Lindbergh:

Master Connecting Rod
Articulated Connecting Rods
Inlet and Exhaust Cam
Inlet and Exhaust Valve
Rocker Arms

These parts were forged from 3½% nickel and nickel-chrome alloy steels.



GOLD MEDAL AWARDS received by Bethlehem at the recent Sesqui-Centennial Exposition, Philadelphia, in recognition of the high quality of Bethlehem Alloy Steels and Drop Forgings, are further evidence of the excellence of these products.



With the indomitable courage of a true hero and with profound faith in the excellence of the Wright engine which propelled his Ryan plane, Captain Charles Lindbergh made his epochal non-stop flight from New York to Paris.

During every minute of his journey, through sleet storm and under maximum engine stresses, Captain Lindbergh's successful trip, and probably his life, depended upon the perfect functioning of all motor parts.

Bethlehem drop forgings are a part of this famous engine. They did their work efficiently and proved again the excellence of quality and workmanship of Bethlehem products.

The Bethlehem organization is happy to have contributed to the success of Captain Lindbergh in his epochal and heroic accomplishment.

BETHLEHEM STEEL COMPANY
General Offices: BETHLEHEM, PA.

DISTRICT OFFICES:

New York	Boston	Philadelphia	Baltimore	Washington	Atlanta	Pittsburgh
Buffalo	Cleveland	Detroit	Cincinnati	Chicago	St. Louis	San Francisco
		Los Angeles	Seattle	Portland		

Bethlehem Steel Export Corporation, 25 Broadway, New York City, Sole Exporter of Our Commercial Products

BETHLEHEM

Industry Recognizes Need for National Body

(Continued from page 19)

veloping into, the industry's natural development might be considerably hampered by other interests in transportation field who are organized to present their views more effectively.

The Bus Division of the A. A. A. has the support of the National Automobile Chamber of Commerce representing the vehicle manufacturers and its rapidly growing list of members indicates that bus operators are recognizing the importance to them of supporting its activities. It deserves the enthusiastic support of the trade and of bus operators everywhere.

What Anti-Knock Fuels Mean to Motor Transport

(Continued from page 21)

Carbon, of course, also tends to increase temperatures within the cylinder, another condition that is favorable both to knocking and to fuel economy.

There is also the psychological effect on drivers which is worthy of consideration, as no one likes to drive a "pinging" engine. In addition, the wear and tear on the powerplant is reduced, although this factor is difficult to measure.

If compression ratios* of 6.0 to 1 could be used satisfactorily in commercial vehicle engines, substantial reductions would be made in present fuel costs, and more power could be obtained for a given piston displacement than is now being secured. Theoretically the improvement in fuel economy would amount to about 20 per cent and the power increase to about 15 per cent. Actually the gains might be somewhat less but they still would be sufficient to represent a very substantial advance over present conditions.

* The compression ratio is determined by dividing the volume of the cylinder and combustion chamber when the piston is at bottom dead center by the volume of the combustion chamber when the piston is at top dead center

How to Service Truck Four-Wheel Brakes

(Continued from page 17)

tank will prevent any emergency arising which calls for the use of substitutes in the system, according to Mr. Duval.

Removal of wheel cylinder cups and of the master cylinder from the supply tanks are operations which a service station may be called upon to perform. To remove a front wheel cylinder the union on the frame side member is uncoupled and the hose taken off the bracket, the brake shoe clevises are disconnected and the cylinder is detached from the shield by taking out two cap screws just above the brake adjusting screws. The rear cylinders are removed in the same manner except

that the copper tubing is disconnected at the cylinder inlet.

Removal of the wheel cylinder cups is accomplished by withdrawing the pistons by means of a hook inserted in the skirt of the piston. The inlet fitting K, in Fig. 4, prevents the cups from meeting in the center of the cylinder and it should always be inserted before the pistons are replaced.

The procedure for removing the master cylinder from the supply tank is as follows: Remove the drain plug and drain fluid; disconnect three copper tubes and the four cap screws, H in Fig. 1, retaining the cylinder; withdraw the cylinder and take out lock wire at the end; take out master piston cup, return spring and combination inlet and outlet valve.

The bore of the master cylinder should be cleaned thoroughly with crocus cloth and washed with alcohol. It should be free from scores, pits or corrosion. New cups should be installed when a cylinder is serviced and both cup and piston should be dipped in brake fluid before being inserted in the cylinder. Kerosene or gasoline should not be used in cleaning internal parts of the braking system because of the use of rubber in the construction.

Are You Selling All of Your Market?

(Continued from page 10)

group, is general trucking. The next nine in order are oils and gasoline; lumber, logging and mill work; general contractors; groceries and other food products; coals and fuels exclusively; municipal, county, state; owners on R. F. D. routes; creameries, dairies and ice cream manufacturers, and automobiles, supplies and accessories. This group of ten accounts for 62.8 per cent of the total in this capacity range.

In connection with the capacity classifications, it is perhaps interesting to note that of the 968,842 registrations classified as to capacity, 73.5 per cent are rated at one ton or less, 14.2 per cent at over one ton but less than 2½ tons while 10.1 per cent are of 2½ tons and over capacity. This capacity distribution follows closely that of truck production. For example, in 1926, which did not differ materially from previous years, production of trucks rated at one ton or less amounted to 77.7 per cent of the total with those of more than one ton and less than 2½ tons amounting to 14.2 per cent and those of 2½ tons or more representing 10.1 per cent of the total. This close agreement may be taken as an indication of the representativeness of the data.

Considering the great amount of statistical material available regarding truck use, our industry is in a particularly fortunate position. Because registration of trucks is required in all states, it is possible to classify trucks both nationally and locally by vocations and capacities. A further classification by makes also is obtain-

able. With this data it is possible to observe the trends in sales of new trucks by tonnage capacity, by makes and by vocations and to use such observations profitably in the direction of sales effort.

Do Your Prospects Believe What You Say?

(Continued from page 11)

have convinced the prospect of the merit of your product, there is a good chance of getting the order without competition being considered.

The truck business covers a broad sales field and demands an insight into many lines of business. It is only by familiarizing yourself with the transportation problems of your prospects that you are in a position to make him forget competitive sales arguments and allowances.

Association Adopts Uniform Financing Forms

By S. M. Williams

President, Motor Truck Association of Illinois

ONE function of the Motor Truck Association of Illinois, is to cooperate, not only with the responsible and experienced haulers, but also with those individual concerns that own and operate trucks as part of their business and who are finding unfair competition in the haulage field giving their competitors who hire their transportation an undue advantage.

By limiting sales to sound credit risks, the members of the association are discouraging the shoestring operator who has no knowledge of operating costs and cuts his rates far below the level on which he can hope to make a profit.

One of the first things therefore to receive the attention of the Illinois Association was a uniform questionnaire that could be generally accepted and would fulfill its prime function to the satisfaction of everyone concerned.

At the end of April therefore a definite form of questionnaire was adopted, consisting of a financial statement and a general and experience sheets.

Editor's Note—The uniform purchaser's statement gives among other items, the following important data:

Home and business addresses.

Previous employers.

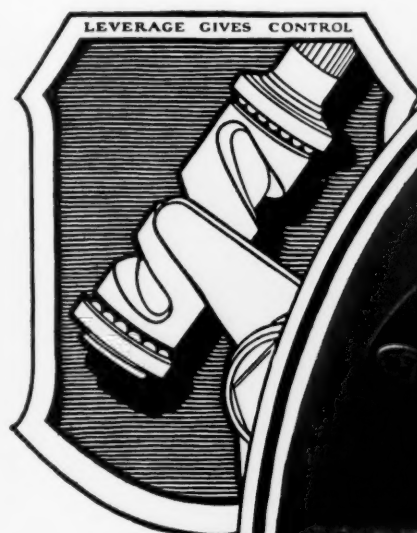
Description of equipment now owned including make, capacity, from whom purchased and the unpaid balance on each vehicle.

Complete data on all forms of insurance carried.

Report on previous repossessions if any.

Description of all contracts on hand including character and amount of work. Banking connections, trade references and list of real estate owned with encumbrances.

The uniform purchaser's financial statement which provides for the listing of his assets and liabilities.

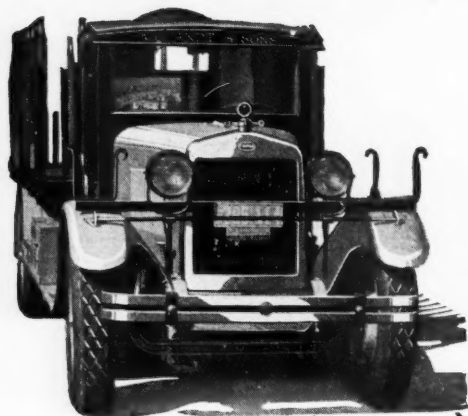


JIM'S PASSENGERS "REST EASY"

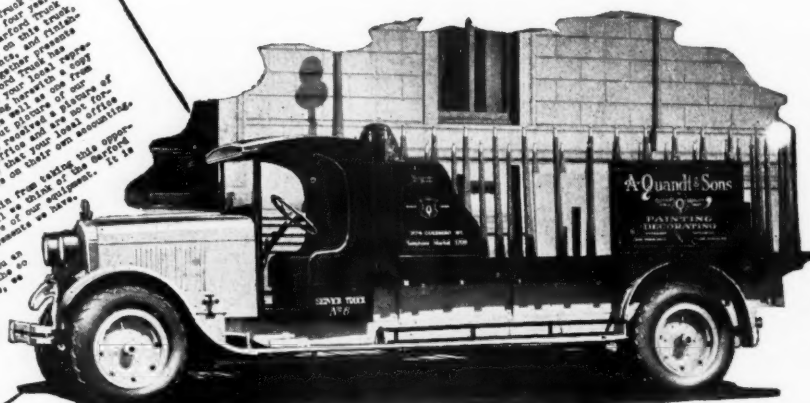
YOU won't find any straining, squirming floor-board pushers among this fellow's passengers. They "rest easy"—serene and confident of a smooth, safe ride. And Jim is just as confident as the passengers. The Ross Cam and Lever Steering Gear gives him quick, responsive control under all driving conditions—actually doubles his ability to handle the bus. Naturally Jim is contented and married to his job. We will appreciate an opportunity to tell you *all* about the Ross.

ROSS GEAR AND TOOL COMPANY . . . Lafayette, Indiana
Member Motor Truck Industries, Inc., of America

ROSS
CAM and LEVER  **STEERING GEARS**
EASIER STEERING LESS ROAD SHOCK



The Greyhound Chassis for Speed, Load-Cushioning and Safety in Commercial Haulage



The Complete GARFORD Line Includes:

1, 1½—2, 2½, 4 and 5 ton trucks, 17-21 passenger Greyhound Motor Buses.

The Greyhound Chassis Model KB.

A. Quandt & Sons, painters and decorators, San Francisco, are noted for the high quality standards they maintain both in workmanship and equipment. It is significant that they selected the Garford Greyhound Chassis.

In other lines of business Garford Greyhounds are affecting economies of distribution. Expensive packing costs in many instances are entirely eliminated through the increased mileage radius given by the powerful but economical six-cylinder engine. The well balanced chassis with its low center of gravity gives load-cushioning which reduces possibility of damage to goods to a minimum. Safety is enhanced through the four wheel hydraulic brakes which make it possible to check high speed when the occasion arises.

The Garford Greyhound Chassis opens new fields to responsible dealers. Write today regarding Franchise on the complete Garford line.

GARFORD TRUCK COMPANY
667-869 Wapak Road
LIMA, OHIO

GARFORD

Commercial Car Specifications—Corrected Monthly

The Specifications, Chassis Prices, Etc., Are Corrected Each Month From Data Supplied Direct by the Makers.
Gasoline Tractor-Trucks Will be Found at the End of Gasoline Commercial Cars

Those Chassis Which Are Sold and Recommended for Bus Use Are Designated in the Following Table by Reference Sign (\$) in Front of the Name
For Motor Bus Chassis See Pages 46 and 47

(Where prices are not given it is because we have been unable to get them from authoritative sources)

Key of abbreviations, page 48

Trade Name and Model	General			Engine						Electrical System		Clutch	Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model	Springs (Make)	Steering Gear (Make)	Wheels (Make)	Rims (Make)	Chassis Weight (lbs.)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
	Standard Wheelbase (Inches)	Tire Size		Make and Model	Number of Cylinders	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)	Fuel System		Ignition System (Make)		Generator and Starter (Make)	Type and Make	Make and Model	Location							No. of Forward Speeds	Universals (Make)	Make and Model	Final Drive	Total Reduction in High	Total Reduction in Low	Brakes, Location																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
		Carburetor (Make)	Pump Feed								Rem		Rem	P. Own										P. Own								Own Cap.	U	U	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

Key of abbreviations, page 48

Trade Name and Model	General			Engine					Electrical System		Clutch	Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model	Springs (Make)	Steering Gear (Make)	Wheels (Make)	Rims (Make)	Chassis Weight (lbs.)										
	Standard Wheelbase (Inches)	Tire Size		N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)	Fuel System			Ignition System (Make)	Generator and Starter (Make)	Type and Make	Make and Model	Location	Universals (Make)							Make and Model	Final Drive	Total Reduction in High	Total Reduction in Low	Brakes, Location					
		Front (Inches)	Rear (Inches)						Carburetor (Make)	Fuel Feed																							
																													No. of Forward Speeds	Type			
Ton—Cont'd																																	
1 Ton—Cont'd	Kenworth OS	2250	131	P 30x5	P 30x5	Bud WTU	4-3 1/2 x 5 1/2	22.5	7	PC	Non	Own	Zen	V G	Rem	Rem	D, B-L	B-L 20	U	3	Spi	She W1002	W	6.00	25.8	A	She 33FA500	Lah	Ros	Sni	Fir	4100	
	King, Zeilzer 22A	.....	131	P 30x5	P 30x5	Con 20L	6-2 1/2 x 4 1/2	24.1	11 L	SP	Non	Chi	Own	V G	Rem	A-L	D, B-L	W-G	U	3	Blo	Tim 5260	S	6.83	22.8	A	Shu 5400	Tut	Ros	Bin	Fir	3700
	King	.....	140	P 34x5	P 34x5	Own	4-3 1/2 x 5 1/2	18	11 L	PC	Non	McC	Own	Str	Rem	Rem	D, B-L	W-G	U	3	Spi	Tim 5260	W	5.16	18.88	A	Tim 1452	Mat	Ros	Bin	Fir	3700
	Larabee A3	1350	133	P 30x5	P 30x5	Con 11U	0-3 1/2 x 4 1/2	25.3	13 L	PC	Non	Fed	Own	Zen	V G	Rem	D, B-L	B-L 31	U	3	Spi	Was 800G	B	5.10	17.1	A	Sal	She	Ros	Sni	Fir	3100	
	Luedinghaus	.....	130	P 34x4 1/2	P 34x4 1/2	Wau V	4-4 x 5	25.6	13 L	PC	Non	Per	Own	Zen	V G	Eis	Bos-A	B-L 31	U	3	Blo	Was 800G	B	4.58	18.3	A	Sal	She	Ros	Sni	Fir	2850
	Menominee	1332	132	P 30x5	P 30x5	Was SU	4-3 1/2 x 5 1/2	25.6	13 L	PC	Non	Mod	Own	Str	V G	Eis	Bos-A	B-L 31	U	3	Blo	Col 53000	I	6.80	21.8	D	Col 5410	Tut	Lav	Van	Fir	2650	
	Nash 2018	1595	130	S 34x4 1/2	S 34x4 1/2	Own 4	4-3 1/2 x 5 1/2	25.6	13 L	PC	Non	Chi	Own	Str	V G	Eis	Bos-A	B-L 31	U	3	Spi	Col 53000	I	6.80	21.8	D	Col 5410	Tut	Lav	Van	Fir	3400	
	Parker Chariot	1750	140	P 33x5	P 33x5	Was SU	4-4 x 5	25.6	13 L	PC	Non	Mod	Own	Str	V G	Eis	Bos-A	B-L 31	U	3	Spi	Tim 5620	S	5.5	15.6	A	Shu 510	Mar	Ros	Opt	Fir	3500	
	Sandow GA	.....	120	S 33x5	S 32x6	Her OX	4-4 x 5	25.6	13 L	PC	Non	Chi	Own	Str	V G	Eis	Bos-A	B-L 31	U	3	Spi	Tim 5620	S	5.5	15.6	A	Shu 510	Mar	Ros	Opt	Fir	3000
	Sandow GA	.....	132	P 30x5	P 30x5	Was SU	4-4 x 5	25.6	13 L	PC	Non	Mod	Own	Str	V G	Eis	Bos-A	B-L 31	U	3	Spi	Tim 5620	S	5.5	15.6	A	Shu 510	Mar	Ros	Opt	Fir	3000
1 1/4 Ton	Service 25H	.....	132	P 30x5	P 30x5	Bud WTU	4-3 1/2 x 5 1/2	22.5	7	PC	Non	Own	Zen	V G	Rem	Rem	D, B-L	B-L 31	U	3	M-E	Tim 5620	B	6.42	30.8	A	Sal	She	Sni	Bin	Fir	3900
	Stewart Truck	950	128	P 32x6	P 32x6	Con	6-2 1/2 x 4 1/2	18.2	12 L	PC	Non	Fed	Own	Zen	V G	Rem	D, B-L	B-L 31	U	3	M-E	Tim 5620	B	6.42	30.8	A	Sal	She	Sni	Bin	Fir	2365	
	Stewart Buddy	985	125	P 30x5	P 30x5	Con	6-2 1/2 x 4 1/2	19.8	13 L	PC	Non	Fed	Own	Zen	V G	Rem	D, B-L	B-L 31	U	3	M-E	Tim 5620	B	6.42	30.8	A	Sal	She	Sni	Bin	Fir	2365	
	United 16	.....	125	P 32x4 1/2	P 32x4 1/2	Wau	4-3 1/2 x 4 1/2	22.5	7	PC	Non	Per	Own	Zen	V G	Rem	D, B-L	B-L 31	U	3	Blo	Tim 5511	B	5.3	17.3	B	Tim 341E	Mar	Gem	Mot	Fir	3180
	U. S. U.	1850	138	S 34x5	S 34x5	Bud WTU	4-3 1/2 x 5 1/2	27.1	7 L	PC	Non	G&O	Own	Zen	V G	Rem	D, B-L	B-L 31	U	3	Spi	Tim 5511	B	5.37	17.3	B	Tim 341E	Mar	Gem	Mot	Fir	3180	
	Yellow Cab F-1	1460	130	P 33x5	P 33x5	Con V4	4-3 1/2 x 5	22.5	7 L	PS	Non	Lon	Own	Zen	V G	Rem	D, B-L	B-L 31	U	3	Spi	Tim 5511	B	5.37	17.3	B	Tim 341E	Mar	Gem	Mot	Fir	3210	
	Yellow Cab F-1	1550	130	S 33x5	S 33x5	Con V4	4-3 1/2 x 5	22.5	7 L	PS	Non	Lon	Own	Zen	V G	Rem	D, B-L	B-L 31	U	3	Spi	Tim 5511	B	5.37	17.3	B	Tim 341E	Mar	Gem	Mot	Fir	3210	
	Yellow Knight T2	1095	124	P 30x5	P 32x6	Yel V	4-3 1/2 x 5	18.9	X	PS	Non	Lon	Own	Zen	V G	Rem	D, B-L	B-L 31	U	3	Thel	Tim 5310-21	S	6.14	24.5	A	Tim 12300	Mar	Gem	Mot	Fir	2605	
	1 1/2 Ton	Acme 24	130	P 30x5	P 30x5	Con S4	4-4 1/2 x 4 1/2	28.9	9 L	FP	Non	Per	Zen	V G	A-L	A-L	D, B-L	B-L 31	U	3	Blo	Tim 53006	S	5.85	30.9	A	Col 5303	Det	Ros	Sni	Fir	3200
		Biederman	154	S 34x5	S 34x5	Wau V	6-3 1/2 x 4 1/2	27.3	3 L	FP	Non	Han	Own	Zen	V G	Del	D, B-L	B-L 31	U	3	Blo	Tim 53006	S	7.2	39.5	A	Shu 5405	Per	Ros	SAM	Fir	3600
Clinton 20B		.....	153	P 30x5	P 30x5	Con S4	4-4 1/2 x 4 1/2	25.6	9 L	FP	Non	Own	Zen	V G	A-L	A-L	D, B-L	B-L 31	U	3	Blo	Tim 53006	S	6.28	30.9	A	Shu 5405	Per	Ros	SAM	Fir	3750
Clydesdale 10A		.....	154	P 30x5	P 30x5	Con S4	4-4 1/2 x 4 1/2	25.6	9 L	FP	Non	Own	Zen	V G	A-L	A-L	D, B-L	B-L 31	U	3	Blo	Tim 53006	S	6.28	30.9	A	Shu 5405	Per	Ros	SAM	Fir	3750
Grann 233 N		.....	133	P 30x5	P 30x5	Con 8R	6-3 1/2 x 4 1/2	27.3	3 L	FP	Non	Own	Zen	V G	A-L	A-L	D, B-L	B-L 31	U	3	Blo	Tim 53006	S	5.33	21.3	B	Tim 5300	Mat	Ros	Sni	Fir	3455
Grann 293 N		.....	129	P 30x5	P 30x5	Con 8R	6-3 1/2 x 4 1/2	27.3	3 L	FP	Non	Own	Zen	V G	A-L	A-L	D, B-L	B-L 31	U	3	Blo	Tim 53006	S	5.33	21.3	B	Tim 5300	Mat	Ros	Sni	Fir	3455
Grann-Bernstein 10		132	P 30x5	P 30x5	Con 8R	6-3 1/2 x 4 1/2	27.3	3 L	PS	Non	G&O	Own	Zen	V G	A-L	A-L	D, B-L	B-L 31	U	3	Pic	Sal A	A	5.85	23.4	B	Sal D	Mar	Ros	Sni	Fir	3250
Guilber B-4		132	P 30x5	P 30x5	Con 8R	6-3 1/2 x 4 1/2	27.3	3 L	PS	Non	G&O	Own	Zen	V G	A-L	A-L	D, B-L	B-L 31	U	3	Pic	Sal A	A	5.85	23.4	B	Sal D	Mar	Ros	Sni	Fir	3250
Guilber B-4		.....	132	P 30x5	P 30x5	Con 8R	6-3 1/2 x 4 1/2	27.3	3 L	FP	Non	Chi	Str	Own	V G	Bos-R	D, B-L	B-L 31	U	3	Spi	Tim 1250	S	5.5	.....	B	Tim 5405	Mer	Ros	Ind	Fir	3900
Hahn B2		.....	132	P 30x5	P 30x5	Con 8R	6-3 1/2 x 4 1/2	27.3	3 L	FP	Non	Chi	Str	Own	V G	Bos-R	D, B-L	B-L 31	U	3	Spi	Tim 1250	S	5.5	.....	B	Tim 5405	Mer	Ros	Ind	Fir	3900
1 1/2 Ton	Int. Harvester S-24	.....	130	P 32x4 1/2	P 32x4 1/2	Lye 4SG	4-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	130	P 32x4 1/2	P 32x4 1/2	Lye 4SG	4-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	140	P 30x5	P 30x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	132	P 35x5	P 35x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	132	P 35x5	P 35x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	140	P 30x5	P 30x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	132	P 35x5	P 35x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	140	P 30x5	P 30x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	132	P 35x5	P 35x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	140	P 30x5	P 30x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
1 1/2 Ton	Int. Harvester S-26	.....	132	P 35x5	P 35x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	140	P 30x5	P 30x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	132	P 35x5	P 35x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	140	P 30x5	P 30x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	132	P 35x5	P 35x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	140	P 30x5	P 30x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	132	P 35x5	P 35x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	140	P 30x5	P 30x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	132	P 35x5	P 35x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem	Rem	P, Lon	Own	U	3	M, M	Tim 1250	S	5.0	.....	B	Tim 1250	S	S.S.	CAS	Opt	3025
	Int. Harvester S-26	.....	140	P 30x5	P 30x5	Bud HS	6-3 1/2 x 4 1/2	22.5	5 L	PC	Non	Lon	Zen	V G	Rem																	

3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500	10000	10500	11000	11500	12000	12500	13000	13500	14000	14500	15000	15500	16000	16500	17000	17500	18000	18500	19000	19500	20000	20500	21000	21500	22000	22500	23000	23500	24000	24500	25000	25500	26000	26500	27000	27500	28000	28500	29000	29500	30000	30500	31000	31500	32000	32500	33000	33500	34000	34500	35000	35500	36000	36500	37000	37500	38000	38500	39000	39500	40000	40500	41000	41500	42000	42500	43000	43500	44000	44500	45000	45500	46000	46500	47000	47500	48000	48500	49000	49500	50000	50500	51000	51500	52000	52500	53000	53500	54000	54500	55000	55500	56000	56500	57000	57500	58000	58500	59000	59500	60000	60500	61000	61500	62000	62500	63000	63500	64000	64500	65000	65500	66000	66500	67000	67500	68000	68500	69000	69500	70000	70500	71000	71500	72000	72500	73000	73500	74000	74500	75000	75500	76000	76500	77000	77500	78000	78500	79000	79500	80000	80500	81000	81500	82000	82500	83000	83500	84000	84500	85000	85500	86000	86500	87000	87500	88000	88500	89000	89500	90000	90500	91000	91500	92000	92500	93000	93500	94000	94500	95000	95500	96000	96500	97000	97500	98000	98500	99000	99500	100000
3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500	10000	10500	11000	11500	12000	12500	13000	13500	14000	14500	15000	15500	16000	16500	17000	17500	18000	18500	19000	19500	20000	20500	21000	21500	22000	22500	23000	23500	24000	24500	25000	25500	26000	26500	27000	27500	28000	28500	29000	29500	30000	30500	31000	31500	32000	32500	33000	33500	34000	34500	35000	35500	36000	36500	37000	37500	38000	38500	39000	39500	40000	40500	41000	41500	42000	42500	43000	43500	44000	44500	45000	45500	46000	46500	47000	47500	48000	48500	49000	49500	50000	50500	51000	51500	52000	52500	53000	53500	54000	54500	55000	55500	56000	56500	57000	57500	58000	58500	59000	59500	60000	60500	61000	61500	62000	62500	63000	63500	64000	64500	65000	65500	66000	66500	67000	67500	68000	68500	69000	69500	70000	70500	71000	71500	72000	72500	73000	73500	74000	74500	75000	75500	76000	76500	77000	77500	78000	78500	79000	79500	80000	80500	81000	81500	82000	82500	83000	83500	84000	84500	85000	85500	86000	86500	87000	87500	88000	88500	89000	89500	90000	90500	91000	91500	92000	92500	93000	93500	94000	94500	95000	95500	96000	96500	97000	97500	98000	98500	99000	99500	100000
3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500	10000	10500	11000	11500	12000	12500	13000	13500	14000	14500	15000	15500	16000	16500	17000	17500	18000	18500	19000	19500	20000	20500	21000	21500	22000	22500	23000	23500	24000	24500	25000	25500	26000	26500	27000	27500	28000	28500	29000	29500	30000	30500	31000	31500	32000	32500	33000	33500	34000	34500	35000	35500	36000	36500	37000	37500	38000	38500	39000	39500	40000	40500	41000	41500	42000	42500	43000	43500	44000	44500	45000	45500	46000	46500	47000	47500	48000	48500	49000	49500	50000	50500	51000	51500	52000	52500	53000	53500	54000	54500	55000	55500	56000	56500	57000	57500	58000	58500	59000	59500	60000	60500	61000	61500	62000	62500	63000	63500	64000	64500	65000	65500	66000	66500	67000	67500	68000	68500	69000	69500	70000	70500	71000	71500	72000	72500	73000	73500	74000	74500	75000	75500	76000	76500	77000	77500	78000	78500	79000	79500	80000	80500	81000	81500	82000	82500	83000	83500	84000	84500	85000	85500	86000	86500	87000	87500	88000	88500	89000	89500	90000	90500	91000	91500	92000	92500	93000	93500	94000	94500	95000	95500	96000	96500	97000	97500	98000	98500	99000	99500	100000
3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500	10000	10500	11000	11500	12000	12500	13000	13500	14000	14500	15000	15500	16000	16500	17000	17500	18000	18500	19000	19500	20000	20500	21000	21500	22000	22500	23000	23500	24000	24500	25000	25500	26000	26500	27000	27500	28000	28500	29000	29500	30000	30500	31000	31500	32000	32500	33000	33500	34000	34500	35000	35500	36000	36500	37000	37500	38000	38500	39000	39500	40000	40500	41000	41500	42000	42500	43000	43500	44000	44500	45000	45500	46000	46500	47000	47500	48000	48500	49000	49500	50000	50500	51000	51500	52000	52500	53000	53500	54000	54500	55000	55500	56000	56500	57000	57500	58000	58500	59000	59500	60000	60500	61000	61500	62000	62500	63000	63500	64000	64500	65000	65500	66000	66500	67000	67500	68000	68500	69000	69500	70000	70500	71000	71500	72000	72500	73000	73500	74000	74500	75000	75500	76000	76500	77000	77500	78000	78500	79000	79500	80000	80500	81000	81500	82000	82500	83000	83500	84000	84500	85000	85500	86000	86500	87000	87500	88000	88500	89000	89500	90000	90500	91000	91500	92000	92500	93000	93500	94000	94500	95000	95500	96000	96500	97000	97500	98000	98500	99000	99500	100000
3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500	10000	10500	11000	11500	12000	12500	13000	13500	14000	14500	15000	15500	16000	16500	17000	17500	18000	18500	19000	19500	20000	20500	21000	21500	22000	22500	23000	23500	24000	24500	25000	25500	26000	26500	27000	27500	28000	28500	29000	29500	30000	30500	31000	31500	32000	32500	33000	33500	34000	34500	35000	35500	36000	36500	37000	37500	38000	38500	39000	39500	40000	40500	41000	41500	42000	42500	43000	43500	44000	44500	45000	45500	46000	46500	47000	47500	48000	48500	49000	49500	50000	50500	51000	51500	52000	52500	53000	53500	54000	54500	55000	55500	56000	56500	57000	57500	58000	58500	59000	59500	60000	60500	61000	61500	62000	62500	63000	63500	64000	64500	65000	65500	66000	66500	67000	67500	68000	68500	69000	69500	70000	70500	71000	71500	72000	72500	73000	73500	74000	74500	75000	75500	76000	76500	77000	77500	78000	78500	79000	79500	80000	80500	81000	81500	82000	82500	83000	83500	84000	84500	85000	85500	86000	86500	87000	87500	88000	88500	89000	89500	90000	90500	91000	91500	92000	92500	93000	93500	94000	94500	95000	95500	96000	96500	97000	97500	98000	98500	99000	99500	100000
3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500	10000	10500	11000	11500	12000	12500	13000	13500	14000	14500	15000	15500	16000	16500	17000	17500	18000	18500	19000	19500	20000	20500	21000	21500	22000	22500	23000	23500	24000	24500	25000	25500	26000	26500	27000	27500	28000	28500	29000	29500	30000	30500	31000	31500	32000	32500	33000	33500	34000	34500	35000	35500	36000	36500	37000	37500	38000	38500	39000	39500	40000	40500	41000	41500	42000	42500	43000	43500	44000	44500	45000	45500	46000	46500	47000	47500	48000	48500	49000	49500	50000	50500	51000	51500	52000	52500	53000	53500	54000	54500	55000	55500	56000	56500	57000	57500	58000	58500	59000	59500	60000	60500	61000	61500	62000	62500	63000	63500	64000	64500	65000	65500	66000	66500	67000	67500	68000	68500	69000	69500	70000	70500	71000	71500	72000	72500	73000	73500	74000	74500	75000	75500	76000	76500	77000	77500	78000	78500	79000	79500	80000	80500	81000	81500	82000	82500	83000	83500	84000	84500	85000	85500	86000	86500	87000	87500	88000	88500	89000	89500	90000	90500	91000	91500	92000	92500	93000	93500	94000	94500	95000	95500	96000	96500	97000	97500	98000	98500	99000	99500	100000
3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500	9000	9500	10000	10500	11000	11500	12000	12500	13000	13500	14000	14500	15000	15500	16000	16500	17000	17500	18000	18500	19000	19500	20000	20500	21000	21500	22000	22500	23000	23500	24000	24500	25000	25500	26000	26500	27000	27500	28000	28500	29000	29500	30000	30500	31000	31500	32000	32500	33000	33500	34000	34500	35000	35500	36000	36500	37000	37500	38000	38500	39000	39500	40000</																																																																																																																								

For export only

[illegible]

[illegible]

Key of abbreviations, page 48

Trade Name and Model	Chassis Price	General		Engine					Electrical System		Clutch	Gearset		Universal (Make)	Rear Axle		Brakes, Location	Front Axle Make and Model	Springs (Make)	Steering Gear (Make)	Wheels (Make)	Rims (Make)	Chassis Weight (lbs.)					
		Tire Size	Make and Model	Bore and Stroke	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)	Fuel System		Ignition System (Make)	Generator and Starter (Make)		Type and Make	Location								No. of Forward Speeds				
										Carburetor (Make)															Fuel Feed			
3 Ton—Cont'd																												
Oshkosh HH	4275	165	S 36x61	Her L	4-4 1/2x5 1/2	32.4	L	PC	Pie	Ovn	Zen	V	Opt	Del	Del	D, B-L	B-L 55	U	4	4	4	4	4	4	4	4	4	4
Pierce-Arrow XB	3750	150	S 36x51	Bud YBU	4-4 1/2x5 1/2	25.6	L	PC	Ovn	Bus	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Rehberger B	162	162	S 36x51	Con K4	4-4 1/2x5 1/2	32.4	L	PC	K-P	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Rehberger 25	165	165	S 36x51	Wau FU	4-4 1/2x5 1/2	25.6	L	PC	Pau	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Rehberger 35W	165	165	S 36x51	Her OX	4-4 1/2x5 1/2	33.7	L	PC	Non	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Rugles 45	148	148	P 32x6	Con 6B	4-4 1/2x5 1/2	33.7	L	PC	Non	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Rugles 45W	189	189	P 32x6	Con 6B	4-4 1/2x5 1/2	33.7	L	PC	Non	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Sanford S245	161	161	P 36x51	Con 6B	4-4 1/2x5 1/2	33.7	L	PC	Non	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Sanford S245	179	179	P 36x51	Con 6B	4-4 1/2x5 1/2	33.7	L	PC	Non	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Sanford S245	160	160	P 36x51	Con 6B	4-4 1/2x5 1/2	33.7	L	PC	Non	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Selden Roadmaster	165	165	P 36x51	Con 6B	4-4 1/2x5 1/2	33.7	L	PC	Non	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Selden Unit 53	154	154	P 36x51	Con L4	4-4 1/2x5 1/2	27.2	L	PC	Sim	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Stoughton F.	156	156	S 36x51	Con S4	4-4 1/2x5 1/2	28.9	L	PC	PS	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Traffic 6000	135	135	S 36x51	Bud ETU	4-4 1/2x5 1/2	31.5	L	PC	Wau	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Taylor D.	3400	150	S 36x51	Bud DS	4-4 1/2x5 1/2	30.6	L	PC	Wau	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
U. S. 30	3375	150	S 36x51	Wau CU	4-4 1/2x5 1/2	31.5	L	PC	Wau	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Ward La France 2B	3400	165	S 36x51	Con K4	4-4 1/2x5 1/2	27.2	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
White-Will SS	160	160	S 36x51	Bud YTU	4-4 1/2x5 1/2	32.4	L	PC	Non	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Woods 56W4	173	173	S 36x51	Con L4	4-4 1/2x5 1/2	32.4	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
3 1/2 Ton																												
Acme 74	4950	173	S 36x51	Con L4	4-4 1/2x5 1/2	32.4	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Acme 76	4950	173	S 36x51	Con 3R	4-4 1/2x5 1/2	28.9	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
American La France Y	174	174	S 36x51	Con L4	4-4 1/2x5 1/2	32.4	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Atterbury 22D	114	114	S 36x51	Ovn Y	4-4 1/2x5 1/2	25.6	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Autocar H	148	148	S 36x51	Ovn H	4-4 1/2x5 1/2	25.6	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Bethlehem M	185	185	S 36x51	Ovn H	4-4 1/2x5 1/2	33.7	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Bethlehem CS	145	145	S 36x51	Ovn H	4-4 1/2x5 1/2	25.6	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Biederman	180	180	S 36x51	Con 6B	4-4 1/2x5 1/2	32.4	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Chicago 40	178	178	S 36x51	Con B5	4-4 1/2x5 1/2	32.4	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Clydesdale 4	177	177	S 36x51	Con B5	4-4 1/2x5 1/2	32.4	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Clydesdale 4X	177	177	S 36x51	Con L4	4-4 1/2x5 1/2	32.4	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Commerces "Relay" 30	4500	180	S 36x51	Her G	4-4 1/2x5 1/2	36.1	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Diamond T K2	4500	180	S 36x51	Her G	4-4 1/2x5 1/2	36.1	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Dixon	4500	180	S 36x51	Bud EBU-1	4-4 1/2x5 1/2	28.9	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Duplex EF	4950	184	S 36x51	Ovn A	4-4 1/2x5 1/2	36.1	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
F. W. D-M	4950	184	S 36x51	Ovn A	4-4 1/2x5 1/2	36.1	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
F. W. D-MF	4950	184	S 36x51	Ovn A	4-4 1/2x5 1/2	36.1	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
G.M.C. K-72A	180	180	S 36x51	Ovn A	4-4 1/2x5 1/2	36.1	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
G.M.C. K-72B	4250	160	S 36x51	Ovn A	4-4 1/2x5 1/2	36.1	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Harvey WHC	4250	160	S 36x51	Ovn A	4-4 1/2x5 1/2	36.1	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Hug HD6	124	124	P 36x51	Bud YBU-1	4-4 1/2x5 1/2	32.4	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Hug HD6	150	150	P 36x51	Bud DS6	4-4 1/2x5 1/2	32.4	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Int. Harvester 74C	154	154	S 36x51	Ovn A	4-4 1/2x5 1/2	36.1	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Int. Harvester 74	160	160	S 36x51	Ovn A	4-4 1/2x5 1/2	36.1	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Kelly Springfield K33	155	155	S 36x51	Ovn A	4-4 1/2x5 1/2	36.1	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Kelly Springfield K33E	156	156	S 36x51	Con L4	4-4 1/2x5 1/2	32.4	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
King Zettler 76	4850	170	S 36x51	Con B5	4-4 1/2x5 1/2	32.4	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Kleber	4850	170	S 36x51	Con L4	4-4 1/2x5 1/2	32.4	L	PC	Pie	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U	4	4	4	4	4	4	4	4	4	4	4
Lang F	4650	160	S 36x51	Wau DU	4-4 1/2x5 1/2	32.4	L	PC	Wau	Ovn	Zen	V	Del	Del	D, B-L	B-L 51	U											

Standard	3 1/2	4	4 1/2	5	5 1/2	6	6 1/2	7	7 1/2	8	8 1/2	9	9 1/2	10	10 1/2	11	11 1/2	12	12 1/2	13	13 1/2	14	14 1/2	15	15 1/2	16	16 1/2	17	17 1/2	18	18 1/2	19	19 1/2	20	20 1/2	21	21 1/2	22	22 1/2	23	23 1/2	24	24 1/2	25	25 1/2	26	26 1/2	27	27 1/2	28	28 1/2	29	29 1/2	30	30 1/2	31	31 1/2	32	32 1/2	33	33 1/2	34	34 1/2	35	35 1/2	36	36 1/2	37	37 1/2	38	38 1/2	39	39 1/2	40	40 1/2	41	41 1/2	42	42 1/2	43	43 1/2	44	44 1/2	45	45 1/2	46	46 1/2	47	47 1/2	48	48 1/2	49	49 1/2	50	50 1/2	51	51 1/2	52	52 1/2	53	53 1/2	54	54 1/2	55	55 1/2	56	56 1/2	57	57 1/2	58	58 1/2	59	59 1/2	60	60 1/2	61	61 1/2	62	62 1/2	63	63 1/2	64	64 1/2	65	65 1/2	66	66 1/2	67	67 1/2	68	68 1/2	69	69 1/2	70	70 1/2	71	71 1/2	72	72 1/2	73	73 1/2	74	74 1/2	75	75 1/2	76	76 1/2	77	77 1/2	78	78 1/2	79	79 1/2	80	80 1/2	81	81 1/2	82	82 1/2	83	83 1/2	84	84 1/2	85	85 1/2	86	86 1/2	87	87 1/2	88	88 1/2	89	89 1/2	90	90 1/2	91	91 1/2	92	92 1/2	93	93 1/2	94	94 1/2	95	95 1/2	96	96 1/2	97	97 1/2	98	98 1/2	99	99 1/2	100	100 1/2	101	101 1/2	102	102 1/2	103	103 1/2	104	104 1/2	105	105 1/2	106	106 1/2	107	107 1/2	108	108 1/2	109	109 1/2	110	110 1/2	111	111 1/2	112	112 1/2	113	113 1/2	114	114 1/2	115	115 1/2	116	116 1/2	117	117 1/2	118	118 1/2	119	119 1/2	120	120 1/2	121	121 1/2	122	122 1/2	123	123 1/2	124	124 1/2	125	125 1/2	126	126 1/2	127	127 1/2	128	128 1/2	129	129 1/2	130	130 1/2	131	131 1/2	132	132 1/2	133	133 1/2	134	134 1/2	135	135 1/2	136	136 1/2	137	137 1/2	138	138 1/2	139	139 1/2	140	140 1/2	141	141 1/2	142	142 1/2	143	143 1/2	144	144 1/2	145	145 1/2	146	146 1/2	147	147 1/2	148	148 1/2	149	149 1/2	150	150 1/2	151	151 1/2	152	152 1/2	153	153 1/2	154	154 1/2	155	155 1/2	156	156 1/2	157	157 1/2	158	158 1/2	159	159 1/2	160	160 1/2	161	161 1/2	162	162 1/2	163	163 1/2	164	164 1/2	165	165 1/2	166	166 1/2	167	167 1/2	168	168 1/2	169	169 1/2	170	170 1/2	171	171 1/2	172	172 1/2	173	173 1/2	174	174 1/2	175	175 1/2	176	176 1/2	177	177 1/2	178	178 1/2	179	179 1/2	180	180 1/2	181	181 1/2	182	182 1/2	183	183 1/2	184	184 1/2	185	185 1/2	186	186 1/2	187	187 1/2	188	188 1/2	189	189 1/2	190	190 1/2	191	191 1/2	192	192 1/2	193	193 1/2	194	194 1/2	195	195 1/2	196	196 1/2	197	197 1/2	198	198 1/2	199	199 1/2	200	200 1/2	201	201 1/2	202	202 1/2	203	203 1/2	204	204 1/2	205	205 1/2	206	206 1/2	207	207 1/2	208	208 1/2	209	209 1/2	210	210 1/2	211	211 1/2	212	212 1/2	213	213 1/2	214	214 1/2	215	215 1/2	216	216 1/2	217	217 1/2	218	218 1/2	219	219 1/2	220	220 1/2	221	221 1/2	222	222 1/2	223	223 1/2	224	224 1/2	225	225 1/2	226	226 1/2	227	227 1/2	228	228 1/2	229	229 1/2	230	230 1/2	231	231 1/2	232	232 1/2	233	233 1/2	234	234 1/2	235	235 1/2	236	236 1/2	237	237 1/2	238	238 1/2	239	239 1/2	240	240 1/2	241	241 1/2	242	242 1/2	243	243 1/2	244	244 1/2	245	245 1/2	246	246 1/2	247	247 1/2	248	248 1/2	249	249 1/2	250	250 1/2	251	251 1/2	252	252 1/2	253	253 1/2	254	254 1/2	255	255 1/2	256	256 1/2	257	257 1/2	258	258 1/2	259	259 1/2	260	260 1/2	261	261 1/2	262	262 1/2	263	263 1/2	264	264 1/2	265	265 1/2	266	266 1/2	267	267 1/2	268	268 1/2	269	269 1/2	270	270 1/2	271	271 1/2	272	272 1/2	273	273 1/2	274	274 1/2	275	275 1/2	276	276 1/2	277	277 1/2	278	278 1/2	279	279 1/2	280	280 1/2	281	281 1/2	282	282 1/2	283	283 1/2	284	284 1/2	285	285 1/2	286	286 1/2	287	287 1/2	288	288 1/2	289	289 1/2	290	290 1/2	291	291 1/2	292	292 1/2	293	293 1/2	294	294 1/2	295	295 1/2	296	296 1/2	297	297 1/2	298	298 1/2	299	299 1/2	300	300 1/2	301	301 1/2	302	302 1/2	303	303 1/2	304	304 1/2	305	305 1/2	306	306 1/2	307	307 1/2	308	308 1/2	309	309 1/2	310	310 1/2	311	311 1/2	312	312 1/2	313	313 1/2	314	314 1/2	315	315 1/2	316	316 1/2	317	317 1/2	318	318 1/2	319	319 1/2	320	320 1/2	321	321 1/2	322	322 1/2	323	323 1/2	324	324 1/2	325	325 1/2	326	326 1/2	327	327 1/2	328	328 1/2	329	329 1/2	330	330 1/2	331	331 1/2	332	332 1/2	333	333 1/2	334	334 1/2	335	335 1/2	336	336 1/2	337	337 1/2	338	338 1/2	339	339 1/2	340	340 1/2	341	341 1/2	342	342 1/2	343	343 1/2	344	344 1/2	345	345 1/2	346	346 1/2	347	347 1/2	348	348 1/2	349	349 1/2	350	350 1/2	351	351 1/2	352	352 1/2	353	353 1/2	354	354 1/2	355	355 1/2	356	356 1/2	357	357 1/2	358	358 1/2	359	359 1/2	360	360 1/2	361	361 1/2	362	362 1/2	363	363 1/2	364	364 1/2	365	365 1/2	366	366 1/2	367	367 1/2	368	368 1/2	369	369 1/2	370	370 1/2	371	371 1/2	372	372 1/2	373	373 1/2	374	374 1/2	375	375 1/2	376	376 1/2	377	377 1/2	378	378 1/2	379	379 1/2	380	380 1/2	381	381 1/2	382	382 1/2	383	383 1/2	384	384 1/2	385	385 1/2	386	386 1/2	387	387 1/2	388	388 1/2	389	389 1/2	390	390 1/2	391	391 1/2	392	392 1/2	393	393 1/2	394	394 1/2	395	395 1/2	396	396 1/2	397	397 1/2	398	398 1/2	399	399 1/2	400	400 1/2	401	401 1/2	402	402 1/2	403	403 1/2	404	404 1/2	405	405 1/2	406	406 1/2	407	407 1/2	408	408 1/2	409	409 1/2	410	410 1/2	411	411 1/2	412	412 1/2	413	413 1/2	414	414 1/2	415	415 1/2	416	416 1/2	417	417 1/2	418	418 1/2	419	419 1/2	420	420 1/2	421	421 1/2	422	422 1/2	423	423 1/2	424	424 1/2	425	425 1/2	426	426 1/2	427	427 1/2	428	428 1/2	429	429 1/2	430	430 1/2	431	431 1/2	432	432 1/2	433	433 1/2	434	434 1/2	435	435 1/2	436	436 1/2	437	437 1/2	438	438 1/2	439	439 1/2	440	440 1/2	441	441 1/2	442	442 1/2	443	443 1/2	444	444 1/2	445	445 1/2	446	446 1/2	447	447 1/2	448	448 1/2	449	449 1/2	450	450 1/2	451	451 1/2	452	452 1/2	453	453 1/2	454	454 1/2	455	455 1/2	456	456 1/2	457	457 1/2	458	458 1/2	459	459 1/2	460	460 1/2	461	461 1/2	462	462 1/2	463	463 1/2	464	464 1/2	465	465 1/2	466	466 1/2	467	467 1/2	468	468 1/2	469	469 1/2	470	470 1/2	471	471 1/2	472	472 1/2	473	473 1/2	474	474 1/2	475	475 1/2	476	476 1/2	477	477 1/2	478	478 1/2	479	479 1/2	480	480 1/2	481	481 1/2	482	482 1/2	483	483 1/2	484	484 1/2	485	485 1/2	486	486 1/2	487	487 1/2	488	488 1/2	489	489 1/2	490	490 1/2	491	491 1/2	492	492 1/2	493	493 1/2	494	494 1/2	495	495 1/2	496	496 1/2	497	497 1/2	498	498 1/2	499	499 1/2	500	500 1/2	501	501 1/2	502	502 1/2	503	503 1/2	504	504 1/2	505	505 1/2	506	506 1/2	507	507 1/2	508	508 1/2	509	509 1/2	510	510 1/2	511	511 1/2	512	512 1/2	513	513 1/2	514	514 1/2	515	515 1/2	516	516 1/2	517	517 1/2	518	518 1/2	519	519 1/2	520	520 1/2	521	521 1/2	522	522 1/2	523	523 1/2	524	524 1/2	525	525 1/2	526	526 1/2	527	527 1/2	528	528 1/2	529	529 1/2	530	530 1/2	531	531 1/2	532	532 1/2	533	533 1/2	534	534 1/2	535	535 1/2	536	536 1/2	537	537 1/2	538	538 1/2	539	539 1/2	540	540 1/2	541	541 1/2	542	542 1/2	543	543 1/2	544	544 1/2	545	545 1/2	546	546 1/2	547	547 1/2	548	548 1/2	549	549 1/2	550	550 1/2	551	551 1/2	552	552 1/2	553	553 1/2	554	554 1/2	555	555 1/2	556	556 1/2	557	557 1/2	558	558 1/2	559	559 1/2	560	560 1/2	561	561 1/2	562	562 1/2	563	563 1/2	564	564 1/2	565	565 1/2	566	566 1/2	567	567 1/2	568	568 1/2	569	569 1/2	570	570 1/2	571	571 1/2	572	572 1/2	573	573 1/2	574	574 1/2	575	575 1/2	576	576 1/2	577	577 1/2	578	578 1/2	579	579 1/2	580	580 1/2	581	581 1/2	582	582 1/2	583	583 1/2	584	584 1/2	585	585 1/2	586	586 1/2	587	587 1/2	588	588 1/2	589	589 1/2	590	590 1/2	591	591 1/2	592	592 1/2	593	593 1/2	594	594 1/2	595	595 1/2	596	596 1/2	597	597 1/2	598	598 1/2	599	599 1/2	600	600 1/2	601	601 1/2	602	602 1/2	603	603 1/2	604	604 1/2	605	605 1/2	606	606 1/2	607	607 1/2	608	608 1/2	609	609 1/2	610	610 1/2	611	611 1/2	612	612 1/2	613	613 1/2	614	614 1/2	615	615 1/2	616	616 1/2	617	617 1/2	618	618 1/2	619	619 1/2	620	620 1/2	621	621 1/2	622	622 1/2	623	623 1/2	624	624 1/2	625	625 1/2	626	626 1/2	627	627 1/2	628	628 1/2	629	629 1/2	630	630 1/2	631	631 1/2	632
----------	-------	---	-------	---	-------	---	-------	---	-------	---	-------	---	-------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	----	--------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----	---------	-----

Key of abbreviations, page 48

Trade Name and Model	General			Engine				Electrical System		Gearset		Rear Axle		Gear Ratios		Front Axle Make and Model		Steering Gear (Make)		Wheels (Make)		Chassis Weight (lbs.)								
	Standard Wheelbase (Inches)	Tire Size		Number of Cylinders	N.A.C.C. Rated H.P.	Valve Arrangement	Oiling System	Governor (Make)	Radiator (Make)	Fuel System		Ignition System (Make)	Generator and Starter (Make)	Clutch	Type and Make	Location	No. of Forward Speeds	Universals (Make)	Make and Model	Final Drive		Type	Total Reduction in High	Total Reduction in Low	Brakes, Location	Front Axle Make and Model	Springs (Make)	Steering Gear (Make)	Wheels (Make)	Chassis Weight (lbs.)
		Front (Inches)	Rear (Inches)							Carburetor (Make)	Fuel Feed																			
5 Ton (Cont'd)																														
Garford 100	5400	36x6	40x14	4-5x6 1/2	40.0	PC	K-P	Own	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.25	97.38	Tim 1632B	Per	Per	Roe	Bel	Non	9450	
G.M.C. K-102A	160	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	9090	
G.M.C. K-102B	184	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	9235	
Goifredson 106	169 1/2	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12000	
Gramm 1048-O	175 1/2	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12400	
Gramm 1068-O	155 1/2	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Gramm-Berns'n 50	168	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Guider K5	1850	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Hahn R	163	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Hendrickson V4	5300	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Indians 41	172	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Int. Harvester 103	160	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Kelly Springfield K550	160	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Kenworth KS	5500	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
King Zeiler 90	168	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Kiesel Goliath	185	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Kleber	160	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Luedinghaus	186	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Macar GI	186	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Macar AC	5500	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Master 64	170	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Old Reliable	150	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida E-9	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC	Own	Zen	G	Spl	Non	D, Own	B-L 60 Max	7	B.G.	Tim 6760D	W	F	10.0	86.3	Tim 1738B	Det	Det	Roe	Day	Non	12700	
Onida F	180	S 36x6	40x14	4-5x6 1/2	40.0	PC	Own	McC																						

[illegible]

Gasoline Tractor Trucks—Cont'd

Gasoline Tractor Trucks—Cont'd																											
1300	S 3657	DS40x8	W/B RBU	4-5x6	40.0 L	PC	Ple	Own	Zen	G	Bos-A	Non	D. B-L	Ovn 15	A	8 Spl	Ovn 5566	W	F	14.0	88.2	B	Ovn	She	Ros	Int	Non
1274	S 3657	S 36x10	Bud EBU-I	4-4 1/2x5 1/2	28.9 L	PC	Non	Str	Str	V	Els	Rem	P. BAB	B-L 51	A	4 Spl	Tim 5566	W	F	7.75	7.75	41.5	Tim	She	Ros	Int	9500
1311	S 3655	S 36x12	Bud YBU-I	4-4 1/2x6	32.4 L	PC	Non	Str	Str	V	Els	Rem	P. BAB	B-L 60	A	4 Spl	Tim 6666	W	F	7.8	97.3	B	Tim	She	Ros	Int	5785
1311	S 3656	S 40x14	Bud YBU-I	4-4 1/2x6	32.4 L	PC	Non	Str	Str	V	Els	Rem	P. BAB	B-L 60	A	7 Spl	Tim 6760	W	F	10.25	91.7	A	Tim	She	Ros	Int	7000
1207	S 3424	S 34x8	Wau V	4-4x5	30.6 L	FP	Wau	Ovn	Zen	V	Appo	L-N	D. B-L	B-L 35	U	4 Spl	Cla 720B	W	F	7.00	37.4	B	Shu	Ovn	Ros	Day	9150
124	S 3655	S 36x12	Wau V	4-4 1/2x5 1/2	30.6 L	FP	Wau	Ovn	Zen	V	Appo	L-N	D. B-L	B-L 51	U	7 Spl	Cla 720B	W	F	8.50	30.7	B	Shu	Ovn	Ros	Day	4690
148	S 3654	S 36x8	Wau V	4-4 1/2x5 1/2	30.6 L	FP	Wau	Ovn	Zen	V	Appo	L-N	D. B-L	B-L 51	U	4 Spl	Tim 6570D	W	F	7.25	38.8	A	Tim	Ovn	Ros	Day	7775
148	S 3655	S 40x10	Ovn DU	4-4 1/2x6 1/2	36.6 L	PC	Wau	Ovn	Zen	V	Els	...	O. H.S	B-L 60	A	4 Spl	Tim	W	F	8.8	52.4	A	Tim	Mat	Ros	Hoo	8675
148	S 3656	S 40x12	Ovn DU	4-4 1/2x6 1/2	36.6 L	PC	Wau	Ovn	Zen	V	Els	...	O. H.S	B-L 60	A	4 Spl	Tim	W	F	8.8	52.4	A	Tim	Mat	Ros	Hoo	9175
148	S 3656	S 40x12	Ovn DU	4-4 1/2x6 1/2	36.6 L	PC	Wau	Ovn	Zen	V	Els	...	O. H.S	B-L 60	A	6 B.G.	Tim	W	F	8.8	52.4	A	Tim	Mat	Ros	Hoo	8100
148	S 3656	S 40x12	Ovn DU	4-4 1/2x6 1/2	36.6 L	PC	Wau	Ovn	Zen	V	Els	...	O. H.S	B-L 60	A	6 B.G.	Tim	W	F	8.8	52.4	A	Tim	Mat	Ros	Hoo	8400
148	S 3656	S 40x12	Ovn DU	4-4 1/2x6 1/2	36.6 L	PC	Wau	Ovn	Zen	V	Els	...	O. H.S	B-L 60	A	6 B.G.	Tim	W	F	8.8	52.4	A	Tim	Mat	Ros	Hoo	8800
148	S 3656	S 40x12	Ovn DU	4-4 1/2x6 1/2	36.6 L	PC	Wau	Ovn	Zen	V	Els	...	O. H.S	B-L 60	A	6 B.G.	Tim	W	F	8.8	52.4	A	Tim	Mat	Ros	Hoo	9250
148	S 3657	S 40x14	Ovn DU	4-4 1/2x6 1/2	36.6 L	PC	Wau	Ovn	Zen	V	Els	...	O. H.S	B-L 60	A	6 B.G.	Tim	W	F	8.8	52.4	A	Tim	Mat	Ros	Hoo	10250
Opt	S 40x7	DS40x6	Ovn 6	6-4x5 1/2	36.6 L	PC	Wau	Ovn	Zen	V	Appo	Bos-A	Ovn	Ovn	U	5 Ovn	Ovn	R	D	8.50	59.5	E	Ovn	Ros	Day	8500	
Opt	S 40x7	DS40x7	Ovn 6	6-4x5 1/2	36.6 L	PC	Wau	Ovn	Zen	V	Appo	Bos-A	Ovn	Ovn	U	5 Ovn	Ovn	R	D	8.50	85.0	E	Ovn	Ros	Day	10000	
Opt	S 40x8	DP40x8	Ovn 6	6-4 1/2x5 1/2	36.6 L	PC	Ovn	Ovn	Zen	V	Appo	Bos-A	Ovn	Ovn	U	5 Ovn	Ovn	R	D	8.50	85.0	E	Ovn	Ros	Day	8500	
Opt	S 40x7	DS40x7	Ovn 6	6-4 1/2x5 1/2	36.6 L	PC	Ovn	Ovn	Zen	V	Appo	Bos-A	Ovn	Ovn	U	5 Ovn	Ovn	R	D	8.50	85.0	E	Ovn	Ros	Day	8500	
4700/129	S 3653T	DS40x5	Ovn GHR	4-4 1/2x5 1/2	28.9 L	PC	Ovn	Ovn	Zen	V	...	Ovn	Ovn	Ovn	U	4 Spl	Ovn	R	F	11.7	58.3	A	Ovn	Ovn	Ros	Day	10000
																										8120	

Motor Bus Chassis Specifications

For Other Chassis Which Are Recommended and Adaptable for Bus Use, See Models Having Sign (§) in the "COMMERCIAL CAR SPECIFICATIONS"

Key of abbreviations, page 48

MAKE AND MODEL	GENERAL			ENGINE			ELECTRICAL SYSTEM			Normal Speed	TRANSMISSION			REAR AXLE		FRONT AXLE	TIRES AND WHEELS			Turning Radius (Ft.)	DIMENSIONS (in.)									
	WEIGHT			Number of Cylinders, Bore and Stroke,	Radiator Make	Carburetor Make	Ignition System Make				Generator and Starter Make	Battery	High M. P. H.	Low M. P. H.	CLUTCH		GEARSET		Make and Model		Final Drive	Brake Location	Make and Model	Steering Gear	TIRES (in.)		Wheels—Make	Floor Height	Length	Width
	Seating Capacity	Chassis Only	Chassis with Body				Wheelbase	Make and Model	Radiator Make								Carburetor Make	Make												
																		Generator and Starter							Br. Cap.	Voltage and Amp.				
CF 508	30	3000	3000	220	Hi S	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-115	...	D. Own	Own	4 Sps	Tim 65350	W	E	Tim	Roe	P 38-7	DP38-7	Bud	...	...	...	...
CF 619 (gas. elec.)	28	3110	3240	230	Hi S	6-34x5 3/8	Zen	Del	Boe-A	Pol	12-115	...	D. Own	Own	4 Sps	Tim 65350	W	E	Tim	Roe	P 38-7	DP38-7	Bud	...	...	...	...
CF 661	28	3110	3240	230	Hi S	6-34x5 3/8	Zen	Del	Boe-A	Pol	12-115	...	D. Own	Own	4 Sps	Tim 65350	W	E	Tim	Roe	P 38-7	DP38-7	Bud	...	...	...	...
one 121.	22	4010	5460	198	Con 6B	6-34x5 3/8	Zen	Del	Boe-A	Pol	12-115	...	D. Own	Own	4 Sps	Tim 65350	W	E	Tim	Roe	P 38-7	DP38-7	Bud	...	...	...	...
Bridgeport HB.	22	5500	9260	205	Con 17HS	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-130	45	5.0	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
rockaway EB.	22	3975	6300	224	Wls BU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-130	45	5.0	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
rockaway EB.	18	3150	5300	183	Wls BU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-130	45	5.0	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
rockaway EB.	22	4150	7575	200	Wls BU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
rockaway H.	22	6450	11000	322	Wls H	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
rockaway H.	20	7680	11000	322	Wls H	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	5925	5700	275	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A	Pol	12-220	45	8.5	D. B-L	B-L 55	4 Blos	Chs B6000	B	A	Shu	Roe	P 32-6	DP32-6	Mot	...	...	...	...
Union 6BS.	30	6800	9600	3000	Wls CU	6-41x5 1/2	Zen	Del	Boe-A																					

[illegible]

[illegible]